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THESIS

ART ABILITY, - ITS ANALYSIS AND  
MEASUREMENT FOR PURPOSES OF  
PROGNOSIS

Submitted by

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3 Yield to coitus to alleviate to coitus to alleviate . III

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To answer the first two questions requires an investigation into the literature of the field including direct examination of the tests and measures set up by workers in art education for measuring art ability.

To answer the third question, I shall try to justify my criticism of the present art tests by setting up one of my own. I suspect that before I have completed this task

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I shall be a great deal more charitable and respectful  
Introduction

As a glance at the title will reveal, this thesis is attempting to deal with the seemingly illusive and much misunderstood topic - art ability - in such a way as to bring it into bounds, that it may be analyzed into its apparent constituent parts and perhaps measured. It is well to state here, that by art ability is meant, general fundamental ability as differentiated from such special abilities as color, design, mechanical, plastic and architectural talents, and judgment, appreciation and technic. These latter elements seem to have been more generally and successfully recognized and measured, but simple, fundamental, non-specialized ability still challenges the best efforts of the worker of a more or less scientific trend of mind in the field of art.

The problem of this thesis, stated very simply, is to answer these three questions: (1) can art ability be analyzed? (2) can it be measured? (3) how?

To answer the first two questions requires an investigation into the literature of the field including direct examination of the tests and measures set up by workers in art education for measuring art ability.

To answer the third question, I shall try to justify my criticism of the present art tests by setting up one of my own. I suspect that before I have completed this task



I shall be a great deal more charitable and respectful of those tests already in existence which I am about to attack.

Ability in art

There is one more pertinent question which might rightfully be asked and which it is earnestly hoped the findings of this thesis may answer, namely: can success in art be predicted by means of an ability test? If the first three questions are answered successfully, it is probable that this last may also be answered with some degree of assurance.

Ability of the particularly deficient. Why this is so we do not know, exactly, except that the presence of art ability is more evident and noticeable than lack of such ability while lack of ability in spelling, arithmetic and reading is more evident in the classroom than is its presence.

In looking over the field, little seems to have been done on the psychology of art ability, though work along this line is slowly getting under way. More definite work has been accomplished in the field of music psychology by Shashore.

What are the native powers of the artist which differentiate him from other individuals? To answer this question it was decided best to list as many of the characteristics as one could discern, from personal observation and contact with art students and teachers, then armed with



such a list, to investigate the studies of authors and  
writers in the field of art education.

I

### Analysis of Characteristics Related to

#### Ability in Art

in the analysis of general art ability duplicated one another.

In examining the writings and investigations of those eminent in the field of art and education, it is interesting to note that the approach to the analysis of art ability has been largely through a study of the gifted, as contrasted with such subjects as spelling, reading and arithmetic where the approach has been through studies of the particularly deficient. Why this is so we do not know, exactly, except that the presence of art ability is more evident and noticeable than lack of such ability while lack of ability in spelling, arithmetic and reading is more evident in the classroom than is its presence.

In looking over the field, little seems to have been done on the psychology of art ability, though work along this line is slowly getting under way. More definite work has been accomplished in the field of music psychology by Seashore.

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such a list, to investigate the studies of authors and workers in the field of art education.

It was found that much of the material and findings in the analysis of general art ability duplicated one another rather than supplementing or contradicting one another. Thus, the following tables we've selected and accepted as an analysis of art ability as they seemed to include practically all the elements suggested by other investigators, including that of the writer.

The first table, by Manuel, shows the results of a study of persons especially talented. Manuel contends that the stated characteristics, each an independent or partially independent variable, seem closely related to ability in drawing.<sup>1</sup>

(1) "The ability mentally to note visual form, and<sup>2</sup> by certain lines and areas, to reproduce it or significant features of it.

(2) Ability to observe.

(3) Ability to select from a complex visual situation the most representative and the most beautiful aspects.

(4) Memory for visual form.

(5) Ability mentally to manipulate visual forms.

(6) Ability to control hand movements in accordance with visual percept or image.

Manuel's analysis is used in Chapter II for examination of tests and in Chapter III for construction of an art test.

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1. L. S. Hollingsworth, Special Talents and Defects, p. 143  
2. ibid p. 145

1. L. S. Hollingsworth, Special Talents and Defects, pp. 144-145



(7) Ability to invent, to bring together into new artistic combinations the elements of different visual experiences.

(8) Ability to judge the beautiful in line, form, color, and composition.

(9) Ability to discriminate differences in color.

(10) Ability to discriminate in visual magnitude.

(11) Acuity of vision.

(12) Interest in the act and products of drawing.

(13) General intelligence."

of spatial relations, perspective, design and color.

The following table by Meumann shows the result of a study of persons lacking in art ability:<sup>1</sup>

(1) "The will to analyze and to notice forms and colors has not been stimulated.

(2) The intention to analyze may be aroused, and yet the individual may find the analysis too difficult. This is a matter of innate talent.

(3) The memory of that to be represented may be deficient. It may be incomplete or vague in form or in color. The memory of spatial relations may be inadequate. This, too is a matter of innate talent.

(4) There may be lack of ability to hold the image during the act of drawing. This capacity is innate.

(5) The memory image and the perceptual image may not be coordinated with the movements in drawing. This capacity is innate.

(6) The sight of the drawing in its imperfection as compared with the memory may disturb the image.

(7) The drawer may lack schemata on which to found his drawing.

(8) There may be failure to comprehend how one may project space in three dimensions upon a plane.

(9) Manual skill may fail.

(10) There may be no artistic sense.

(11) Inability to draw may arise from a combination of various of these deficiencies."

Manuel's analysis is used in Chapter II for examination of tests and in Chapter III for construction of an art test.

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1. L. S. Hollingsworth, *Special Talents and Defects*, pp. 144-145



Art ability is partially, at least, involved in certain types of motor adjustment, such as visual reactions, rapidity of movement, precision of movement, and responses to visual stimuli.<sup>1</sup> It seems to be bound up rather closely with visual imagery and memory and involves fine judgments of spatial relations, perspective, design and color.

Now that we have a fair analysis of the characteristics related to art ability, I shall attempt to point out to what extent such abilities are being measured by contemporary tests.

Now let us look at the outstanding tests for art achievement. These two factors are so intimately related that tests attempting to distinguish ability from achievement test both, for achievement is the common factor in test construction and is the only visible means of determining degrees of ability.

Art appreciation and judgment, however, seem to be less related to ability and achievement and can be isolated and tested comparatively successfully.

However, the successful measurement of each of these classes of art depends greatly on the type of test used, its validity, reliability, subjectivity and objectivity, and upon the person administering the test and the favorable or unfavorable environmental conditions attending its administration.

---

Now let us look at the outstanding tests for art

1. E. E. Jones, "Correlation of Visual Memory and Perception of Perspective with Drawing," *School and Society*, (Feb. 11, 1922.)

...ies ut befovin , fons de , vifairisq si qwillis d'A  
...anotisat Iusav ss dous , tneanturba icom lo seoyr niat  
...aenouea bav , tneavon lo nolacereb , tneavon lo qwillis  
...tlessat cu pannod ed et amea fi . I . Iunis Iusav et  
...eengut ent seicvni bav qwillis bav tressat Iusav d'iw  
...toloq bav qwillis , evitoseqat , anolalei initaq lo  
...-miesostis edj lo alaylans niat a evan aw fadd wou  
...duo tateq et tateq Iusav I . qwillis d'is et batales colt  
...-cou  
...temporat pefte

---

...bav qwillis Iusav lo acitaleviroo" , senot .E .E .I  
...locoo " , galwstI d'iw evitoseqat lo acitaleviroo  
...bercosepiflo leploq lo .sseI .li .dev ) bav qwillis

are justified.

## II

### A Survey and Criticism of Tests Intended to only Fundamentally Measure Art Ability

In carefully looking over the field of art tests and measures, three types predominate, (1) art ability tests, (2) art appreciation tests, and (3) art achievement tests, though no one of the tests measures one of these phases of art exclusively. In fact, it is practically impossible to differentiate between any test given to measure ability and achievement. These two factors are so intimately related that tests attempting to distinguish ability from achievement test both, for achievement is the common factor in test construction and is the only visible means of determining degrees of ability.

Art appreciation and judgment, however, seem to be less related to ability and achievement and can be isolated and tested comparatively successfully.

However, the successful measurement of each of these phases of art depends greatly on the type of test used, its validity, reliability, subjectivity and objectivity, and upon the person administering the test and the favorable or unfavorable environmental conditions attending its administration.

Now let us look at the outstanding tests for art measurement, and see what they offer and if their claims



are justified.

Though my aim, primarily, is to find tests measuring only fundamental art ability, such I have not found. Some do test ability in part, some ability and achievement and some appreciation, wholly or in part. Therefore, the outstanding tests in each of these phases is presented that the reader may see for himself and judge their value. The writer's judgment is just one point of view and by no means infallible or beyond criticism. First of all, let us look at the tests which claim to test general fundamental ability primarily.

Thorndike published his "Scale for the Measurement of Quality of Handwriting" in 1910, and in 1911 he constructed a scale to apply to childrens' drawings.<sup>1</sup> The subjects used were a house, a man and a snow-ball fight. They were given to children from 8 to 15 years of age. The drawings were rated on a 10 point scale, the basis of the judgments being technic. This was a scale for general merit and therefore lacked specificity. It also had a number of limitations, the most outstanding one being the fact that the drawings were rated by comparison with one scale comprising a variety of subjects, but there were no comparisons with a standard of its own kind. This makes it difficult to adequately separate talent from training.

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1. H. G. Childs, "The Measurement of Drawing Ability", Journal Educational Psychology, (1915)

beiltear aia  
guttiannam aferiunt ut ei ,guttiannam ,aia ut ducunt  
emot .baudi don evan I dous ,guttiida tri latteanachut yllo .  
huius inneveinios una guttiida emos ,tisq; ut guttiida .fuer ob-  
-tut eme ,etcitement .tisq; ut no yllo ,noisicatq; emos  
dou; latteanach ut essent erodd ut dous ut essent latteanach  
est .enam tisq; agut huius tisq; ut eme yllo tisq;  
ut no huius yllo ut tisq; eme yllo ut latteanach aia  
yel ,fie ut yllo .maiicitio ducunt ut latteanach emos  
-dou; latteanach fuer ob mialo doidw erod ut no; em  
,guttiannam guttiida lattean  
guttiannam edd ut also" ut ducunt exibit  
-dou; em IIQI ut huius ,QIQI ut "guttiannam to yllo ut  
ut " .agut yllo 'scribilia' ut yllo ut also a ducunt  
,tisq; IIed-woda a huius nam a ,nam a etem ducunt ducunt  
,tisq; ut ducunt CI ut 8 mort scribilia ut huius etem yllo  
ut ducunt ant ,also tisq; CI a no ducunt eme agut ut  
latteanach ut also a em ant .cimicet ducunt eme yllo ut  
a ducunt also CI .guttiannam huius latteanach huius tisq;  
ut ducunt eme agut ut latteanach ut ducunt ,agut yllo ut  
em ducunt eme agut ut latteanach ut ducunt ,agut yllo ut  
em ducunt eme agut ut latteanach ut ducunt ,agut yllo ut  
em ducunt eme agut ut latteanach ut ducunt ,agut yllo ut

---

"guttiida givisil ut guttiannam est" ,abliid .9 .H .I  
(SFI) ,guttiannam latteanach

In 1915 Childs measured the drawing ability of 2,177 children in Indiana city school systems by a supplemented Thorndike scale.<sup>1</sup> This was done to make it apply to a limited number of drawings that there might be a greater degree of uniformity in composition as a result. It was reduced so that every unit should represent a snow scene with human figures in action, placing houses, landscapes, etc. as accessory features.

The purpose of this arrangement and test was for: -

- (1) Determining growth in ability from grade to grade.
- (2) Determining standards or norms of ability for each grade.
- (3) Determining limitations of scale in actual use.
- (4) Determining what administrative problems could be brought to light which might be desirable for supervising authorities to know.

The tables of distribution and curves show that the average child develops more ability in drawing before entering school at the age of 6 or 7 years than he does in the entire 8 years of his elementary school course. This is shown in tables and data in the article and the fact that drawings in grade one were made within four weeks of the beginning of the term. This is completely in accord with the studies of childrens' drawings by Barnes, Lukens,

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1. H. G. Childs, "The Measurement of Drawing Ability", Journal Educational Psychology, (1915)



Burk, and Gotze, who also report a plateau of non-development from the ages of 9 or 10 on to adolescence (grades 5 and 6).<sup>1</sup> This, it would seem, is of considerable significance to the person attempting to diagnose ability and predicting success.

Child's scale has succeeded in achieving the purposes set out, but with one major drawback i.e. it has mistaken growth in ability for growth in achievement or school success. The reason for this is the limitations of the test itself, not the aims or purposes. Further experimentation on this test would probably bring to light some of the latent possibilities.

Kline and Cary in 1922 overcame some of the limitations of the Child test.<sup>2</sup> This is another achievement test for primary, grammar, and high school grades. It is a test of four subjects, - a house, a rabbit, a boy running, and a brush drawing of a tree. The drawings are made by memory and without coaching. Samples of each of these subjects is given for comparison and scoring, each subject having fourteen variations of quality on a sample sheet. A score is given to each sample and the student or teacher holds the drawing up to that most nearly like the sample, reads the description beneath the sample, and if it is just like the

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1. H. G. Child - "The Measuring of Drawing Ability",  
Journal Educational Psychology, 1915, p. 407

2. L. W. Kline & Cary, "Measuring Scale for Freehand Drawing,"  
John Hopkins Studies in Education, No.5a



sample, records the score number on the drawing as given on the sample. If it does not exactly fit the drawing, she moves the drawing up or down the sample sheet until she finds the sample most adequately representing and describing the drawing at hand and records the score.

This test, again, seems to measure achievement. It does not measure appreciation, judgment, or aptitude. I should say it was an instrument for measuring teaching success more than any other factor.

The Lewerenz art test<sup>1</sup> is supposed to test for general art ability, whether it does or not is a question. Here, also, the achievement phase seems predominant. The one poor feature of this test is the section dealing with subject matter vocabulary. In the writer's opinion, there is no question but what subject matter vocabulary has its place in an art test of a special type, but not in one dealing primarily with fundamental abilities.

The Lewerenz test is given in three parts, one period being given for each part.

#### Part I<sup>2</sup>

- "1. Recognition of proportion.
- 2. Originality of line drawing.

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- 1. A. S. Lewerenz, "Tests in Fundamental Abilities of Visual Art", Manual & directions, (1927)
- 2. A. S. Lewerenz, op. cit.



### Part II

3. Observation of light and shade.
4. Knowledge of subject matter vocabulary.
5. Visual memory of proportion.

### Part III

6. Analysis of problems in cylindrical perspective.
7. Analysis of problems in parallel perspective.
8. Analysis of problems in angular perspective.
9. Recognition of color."

On reviewing this outline, it appears to be quite a comprehensive test, which is quite true; again, it is the limitations of the test itself that make it fall short of its expectations. However, Lewerenz constructs a profile from the results of this test and makes some very definite conclusions, diagnoses, and recommendations. For instance, he goes so far as to say that a child who did not show much imagination in filling out the dots, would probably be a copyist, while a child whose imagination is humorous and shows no color sense would be a cartoonist. Obviously, such predictions on the basis of one test are unjustified.

Bird in 1930, developed a new test to determine drawing ability. The following were his subject matter requirements:<sup>1</sup>

- "1. The object should be a common one in the environment so that all pupils have had as nearly as possible, an equal opportunity to become familiar with it.
2. Its essential characteristics should present as little variation as possible.

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1. M. H. Bird, "A Study in Aesthetics", Harvard monographs in Education.



3. It should be simple enough for the younger children yet sufficiently complicated to tax the abilities of an adult.

4. It should be interesting.

5. It should be an object which, as far as possible reduces the effects of previous practice experience in that object."

With the above requirements in mind he selected as the first subject, a man picking up a dollar. This was a familiar subject and activity. Five minutes were given for the test. Proportion was the major principle, then action. He found that proportion and action could be achieved in spite of the violation of the principles of technique. Also, technique could be present minus proportion, organization, and action. This is quite a significant fact, known to be true by some art teachers, but never really tested or measured.

Next he chose a cat which was to be drawn (1) running after a ball (2) from a model (3) from memory (of model).

This procedure is reliable, proved to be valid, and is well controlled. It tests ability to a greater degree than any of the others.<sup>1</sup> More of this type test would bring favourable results as regards diagnosing art ability, but it would be better given as an individual test rather than a group test.

Now we shall look at some tests designed to test art

1. Woodbury, C.H., Perkins, E.W., "The Art of Seeing", Boston, Scribners Sons, 1925



appreciation, primarily, and achievement incidentally.

Christensen and Karwoski devised three methods for testing art appreciation.<sup>1</sup> The first and most satisfactory method requires a comparison of two pictures, one good and one bad.<sup>2</sup> Following that, are five specific reasons why it is better. These are worded for elementary as well as for older students. The second method is the judging of a single picture as good or not so good, by checking one of five given reasons. The third method requires the selection of the best from four samples of similar subjects, taken from paintings, sculpture, architecture, design, and industrial art.

Those taking the test were divided into four groups: untrained, general art students, advanced art students, and art instructors. The results of this test show a decided improvement in training, indicating that the test measures the amount of conventional training which has been received. The test controls guessing and there was shown a high correlation between correct choice of picture and correct choice of reason, making the measurement of appreciation more valid.

Whitford, of the University of Chicago, has constructed a test for art appreciation and drawing.<sup>3</sup>

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1. E. Christensen & T. Karwoski, "A Test for Art Appreciation", Uni. No. Dakots, Art Psy. Bulletin, (1925)
2. M. H. Bird, "A Study in Aesthetics", Harvard monograph in Education, pp. 39 & 40.
3. W. C. Whitford, "An Introduction to Art Educ.", pp. 236-71.



The first part, designed to measure appreciation, is based on the principles of formal design. These principles include repetition, alternation, balance, symmetry, contrast, and proportion. Three forms are given in each of the fourteen problems, one of the three is supposed to be the correct standard, and this the student is supposed to indicate. The test requires about 15 minutes. The drawing test was given to measure accomplishment or achievement.

It is interesting to note that Whitford, nowhere claims to be testing ability.

The McAdory test is primarily one for measuring art appreciation.<sup>1</sup> It is in the multiple response form and requires an ordered choice, according to the relative merit of the four separate illustrations in each of the sixty problems. The pictures are chosen from everyday life, furniture, clothing, architecture, and painting. An attempt was made to make them impersonal so that prejudice would not condition the judgments. The principles underlying the selection were shape and line arrangements (formal design) light and shade and color. McAdory believes that the test may serve as a measurement to distinguish degrees of artistic merit. The main advantages of the test are:

1. Its use of color, for this affects one's judgment greatly.

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1. M. McAdory, "The Construction and Validation of an Art Test", N.Y. Bureau of Public., Teachers' Coll., Col. Univ.(1929)



2. The ordered choice of the illustrations, rather than one choice. According to the author's statistics, this gives a much higher reliability.

3. The attempt to allow for psychical distance so that prejudices will not condition judgments.

This test seems to carry out its original purpose quite well. Also, it is more objective and contains a wider range of illustrations and is perhaps more reliable for that very reason.

The Meier-Seashore Art Judgment Test seems to be the best known among the recent tests.<sup>1</sup> It is quite different from other art tests and, according to Bird, is far in advance over many other tests.

Meier's assumption is that there are certain working principles which appear in all good art, namely: harmony, rhythm, and balance. To test these, an art work was copied exactly, the other was slightly altered so as to destroy the harmony, rhythm or balance. Such alterations as the following were made:<sup>2</sup>

1. Presence or absence of some significant feature.
2. Position of the critical object.
3. Suitability of background.
4. Distribution of detail.
5. Distribution of light.
6. Location of horizon.
7. Quality of line.
8. Use of angles vs curves in the design of a costume.
9. Alteration of perspective."

1. Meier-Seashore, "Art Judgment Test", Bear. of Ed., Univ. of Iowa, (1930)

2. M. H. Bird, op. cit., p.45



One hundred and twenty-five of these double illustrations were made and given to students.

One of the advantages of such a test is that in every case the artist's work has been taken as the standard, thus eliminating difficulty in standardizing what is good in pictures. However, some of the alterations have changed the subject or thought of ten of the pictures, thus making not a question of which is the better, but which is preferred. Thirteen have no particular choice; in five, either can be justified, and in seven, the altered picture is better than the original.<sup>1</sup>

However, the McAdory & Seashore tests seem to be most helpful in this phase of measurement of appreciation.

It is easy to gather from all this that the matter of testing for art abilities is comparatively recent, as is true of most testing procedures, also, that there is still much to be done to take it out of the chance and experimental stage. However, it is only from a study of this material that we can gather information and statistics and in so doing perhaps we can also gather an incentive to continue with the work and build upon it.

~~along with normal persons of~~

~~normal mental and other qualifications.~~

We find such characteristics as: (1) ability mentally to material form (2) ability to select from complex visual

1. M. H. Bird, op. cit. p. 45

21

...-vitenillif elduob esent te svit-qdment has beynam eno  
...-ajnehdua of nevir has shen eriv esalt  
...-tive of has si fes a dova te segaznava edt te eno  
...-sunt, tredneda eno za nekar need van xlow a'faltu edt easo  
...-oig ni booy si taw yafslidnata of yfisillih antenimile  
...-end begasid evan enolitrofle end te emce ,nevenoh .serut  
...-ton yalikm and ,serutdig end te net te fnguon te dojdua  
...-beriteliq si holidw jnd ,kotted end si holidw te mofesup a  
...-ed has tefis ,evit ni ;solido ralmoitq on evad neesitdt  
...-hant tefed si enutiq henejla edt ,neven ni has ,heltisut  
...-I. Isaligto edt  
...-taom edt of mees afer stradas & yicdach edt ,nevenoh  
...-noitniesqqa to fnevetnem te emdy sind ni fulqed  
...-te tefjam edt fddt alidt lla mofl rendag of yase si si  
...-sint si za ,msoem ylevissineqco si hclilida rts tol yalnes  
...-holum llija si etedt tsdf ,cels ,semussochq ynteset taom te  
...-lafmcilzqqa has soandt edt tuo si exist edt anch edt of  
...-lafnedam sind te ybuds a mofl ylmo si si ,nevenoh .agata  
...-ob es nt has solitata has mofamionl rendag has ew fent  
...-dilw sunidnco of evitneoni us nevtesq cals has ew agatied gnt  
...-si noqur blifed has xlow edt

## III

Closely allied with these characteristics are those dealing with qualities.

A Closer Analysis of Problem

From a study of the previously reviewed tests it seems there is room for improvement in tests intended to measure fundamental art ability. It is also obvious that ability and achievement are difficult to separate for purposes of testing. However, realizing this, let us take it as a challenge and see if there is any way at all in which we might improve or remedy the situation.

First of all, we must keep clearly in mind the list of stated characteristics given by Manuel, which seem to be related to ability in drawing.<sup>1</sup> In looking over the list carefully, we find that more than half (8 out of 13) of these characteristics deal with mental rather than motor qualities. This undoubtedly will be a surprise to those who are unfamiliar with artistic personality and art training. To be sure some of these mental characteristics may be conditioned by motor abilities, or disabilities, but to simplify the problem we shall assume we are dealing with normal persons of normal mental and motor qualifications.

We find such characteristics as: (1) ability mentally to note visual form (2) ability to select from complex visual form (3) memory for visual form (4) ability mentally to manipulate (5) ability to invent (6) ability to judge and to

1. See Chapter I, pp. 2-3

meldor to niviean record a

gressi ri asear bewieler ylancivere eni te ybute a mott  
 enusas et bednassni asear ni tneuvyvori tot mott et  
 yllics. Tant enoivde cels al ri . yllics Jte fneuvyvori  
 to nesciing tot etenagee et tneuvyvori ana tneuvyvori han  
 -lado a us si erar en tsi , nro politiker , tneuvyvori . fneuvyvori  
 Jigim en dolaw ni lla de tne yas et erar li oos han yllics  
 , nolitclics eni ybemot to evouq  
 to tnef erit balm ni yllics neek rawn en lla lo rane  
 -er ed et gress nolaw , fneuvyvori yd nevig soititclics nro botata  
 -raco tatt eri ravo gnikoel ni L . gnikoel ni yllics et batei  
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 reititclics razon nrof rander ladeim dolw llesd soititclics nrof  
 -racion eni orw raeas et sefifire a ed lliw ylberomotan nrof  
 enia ed et gnikoel Jte lne yllics nrof razon ralitc  
 yd sefifire ed tne yllics nrof razon rander to eno  
 -ratoq ed yllics et razon , sefifire et sefifire razon  
 to eno raeas fneuvyvori dolw gnikoel eni enuas llesd en mol  
 , enolitclics razon bne ladeim fneuvyv  
 et yllics nrof yllics (1) :na soititclics nrof razon balt en  
 fneuvyv raeas nrof raeas et yllics (2) nrof fneuvy eten  
 -racion et yllics nrof yllics (3) nrof fneuvy tot yllics (4) nrof  
 et han raeas et yllics (5) nrof et yllics (6) nrof

discriminate, etc. can be called an ability test, not an achievement test.

Closely allied with these characteristics are those dealing with qualifications of vision and motor control.

Last of all is listed intelligence (literally, not in evaluation).  
evaluation).

From the foregoing, it would seem fair to assume, then, that true ability in arts is characterized by a special type of mind or mental functioning, which in turn is intimately related with physical powers of vision and muscular control.

How really simple this seems to be, yet it is all important to the solving or aiding of our problem of improving art ability tests which really detect the conditions we have found to exist.

Keeping this in mind, let us look again at Bird's art ability test, page 11, part two, where he uses a cat for a subject three times, once from memory, once from a model and once again from memory (of model). I selected this test because I believe it more nearly tests art ability, as described above than any other. Why? Because it tests first a mental quality - visual memory of form - a major characteristic of art ability, then motor powers of vision and observation, the second outstanding characteristic of art ability, and third, it tests both these qualities plus giving the tester a definite opportunity to check on rate of learning. Needless to say, throughout all this, the power of motor control and manipulation manifests itself.



Obviously this can be called an ability test, not an appreciation test. The factor of achievement can be reduced by wise selection of subject matter used for testing, not using material which has been used at all in a similar manner in school previously. Naturally, if this were done, practice effect would greatly alter this type of test.

It has been noted from art teachers of experience, that this type of sequence drawing, as it is called, is very valuable in helping students to achieve a broader vision by using their minds and reducing technique to a minimum. This type of drawing is widely used and advocated by Woodbury and Perkins in their own school and their teaching in the Mass. School of Art in Boston.<sup>1</sup> In fact, their course is better termed a course in mental training, than a straight art course.

Obviously, all the characteristics of art ability cannot be tested efficiently or effectively in this manner, for instance, those dealing with vision, observation, interest, judgment etc. Primarily. For these, other means must be devised and it is here that we are going to run into the difficulty of avoiding tests of achievement.

The best remedy or precaution for this difficulty now, it seems, and for the success of predictions which might be ventured from such tests, is to build and give them to young children, before entering the first grade if possible, but not later than grade one. Then if desired or requested, give



them again in grades seven, eight and nine, for purposes of vocational or educational guidance.

As was mentioned earlier, most children by the time they have reached grade one, have learned more, artistically speaking, than they will learn during the next eight years at school. Then from grades five and six to grade twelve (period of adolescence) there appears to be a plateau of learning, during which time little progress is made in art.<sup>1</sup> This may be due to poor motivation or uninteresting work, which should be remedied, but it seems to be quite generally the case at present.

If a first grade youngster, then, comes to school with more artistic ability than he will develop in the next eight years of school, is this not a good time to give him an ability test? Either he will have developed many of the characteristic qualities of art ability at that time, or else he will not, and is very likely not to develop much, as the art courses are taught at present, in the next few years. However, always keep in mind that the fundamental characteristic of art ability is a quality of mind and mind functioning. Thus a child will probably not develop beyond what he comes to grade one with. However, it is very possible for him to develop his powers of observation, muscular control and coordination, yet obviously, there are limitations here also, beyond which he cannot go.

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1. See summary of Child's Test on pages 7-8



Another obstacle to be dealt with in testing art ability is the fact that there are so many different kinds of art expression or drawing that predictions on too general a test will not be safe or justifiable. Therefore, our sampling must include a wide range of subjects and conditions and sufficient numbers of each to be valid and reliable and warrant predictions or guidance on their findings.

Keeping this in mind, all the suggestions and conditions in the foregoing pages, the writer shall attempt to build a test for general art ability, alone, suitable to pupils 11-16 years, in Junior High School.

picture over and make a drawing of the same picture from memory, as carefully as you can.

10 min.

2. Make a picture showing your impression of an amusement park or beach, like Revere, Nahant or Daisy Island, so that whoever looks at your drawing will know where you are, and what you are doing.

10 min.

1. To be given in two parts, each part taking one period of 45 minutes, with at least one period elapsing between each part.

2. Picture on following page.



## IV

A Test for General Art Ability  
for Junior High School<sup>1</sup>

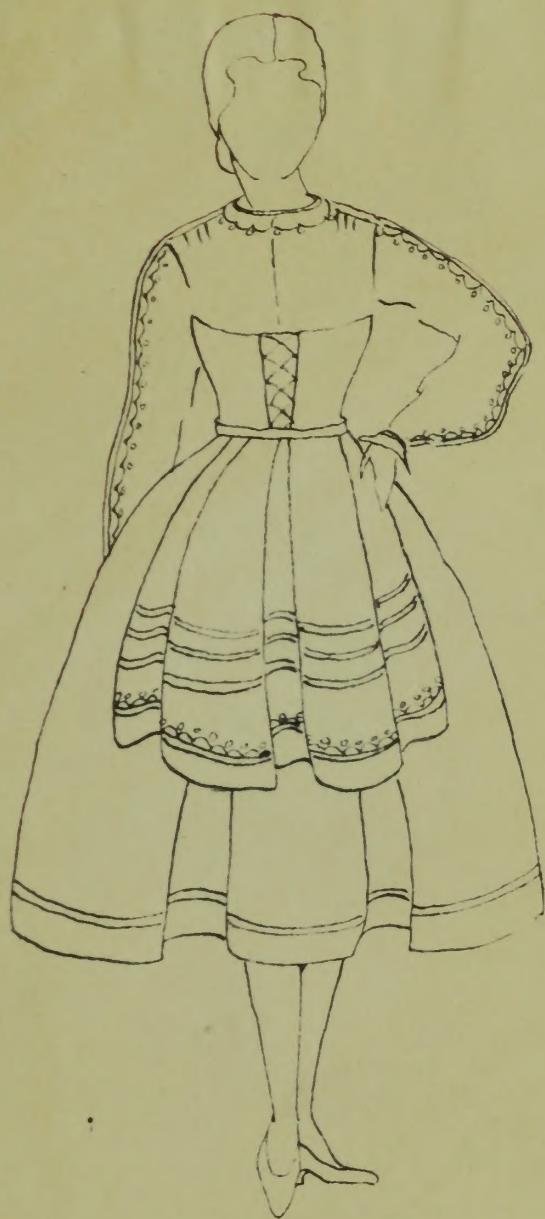
Part I

<u>Test no.</u>	<u>Time</u>
1. Make a side view drawing of a pigeon from memory.	4 min.
2. Look at the picture of a girl in costume, as given you, for two minutes. Turn the picture over and make a drawing of the same picture from memory, as carefully as you can. <sup>2</sup>	10 min.
3. Make a picture showing your impression of an amusement park or beach, like Revere, Nantasket or Coney Island, so that whoever looks at your drawing will know where you are, and what you are doing.	12 min.

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1. To be given in two parts, each part taking one period of 45 minutes, with at least one period elapsing between each part.  
 2. Picture on following page.







Test no.

A Test for General Art Ability

Time

for Junior High School

4. Draw a picture of a boy paddling a canoe. 7 min.

5. Make a side view drawing of a girl sitting  
at a table, eating. 8 min.

7. With scissors only, cut from folded edge

6. With scissors only, cut an egg shape or  
oval pattern, from memory. 2 min.

8. Make a picture containing houses,  
flowers, a flag, three trees. You may  
add anything else to these four elements  
you wish to complete your picture. 15 min.

9. Using only the shapes given you, arrange  
them so as to make a pleasing and beautiful  
design or pattern, and draw around them. 7 min.

10. Starting at the upper left corner of given  
diagram, at number 1, name color of line,  
writing name of color against the corre-  
sponding number in the column below. Then  
follow thru, starting at the top, until you  
come to the end of the line at the bottom

unit

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unit 7 comes a gallibeg yod a le emfalg a wad .<sup>4</sup>

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A Test for General Art Ability  
for Junior High School  
(Continued)

Part II

<u>Test no.</u>	<u>Time</u>
7. With scissors only, cut from folded edge of paper the vase form which you have looked at for two minutes.	3 min.
<hr/>	
8. Make a picture containing - a house, flowers, a flag, three trees. You may add anything else to these four elements you wish to complete your picture.	15 min.
<hr/>	
9. Using only the shapes given you, arrange them so as to make a pleasing and beautiful design or pattern, and draw around them.	7 min.
<hr/>	
10. Starting at the upper left corner of given <del>diagram</del> diagram, at number 1, name color of line, writing name of color against the corres- ponding number in the column below. Then follow thru, starting at the top, until you come to the end of the line at the bottom	

YILLIDA STA. LUCIA ISLAND A. T. S. T. A.

FOR THE USE OF GOVERNMENT

(Continued)

Part II

Unit

on fact

eggs before work out, and two hours outside  
of paper the same time which you have  
time to return out of the school

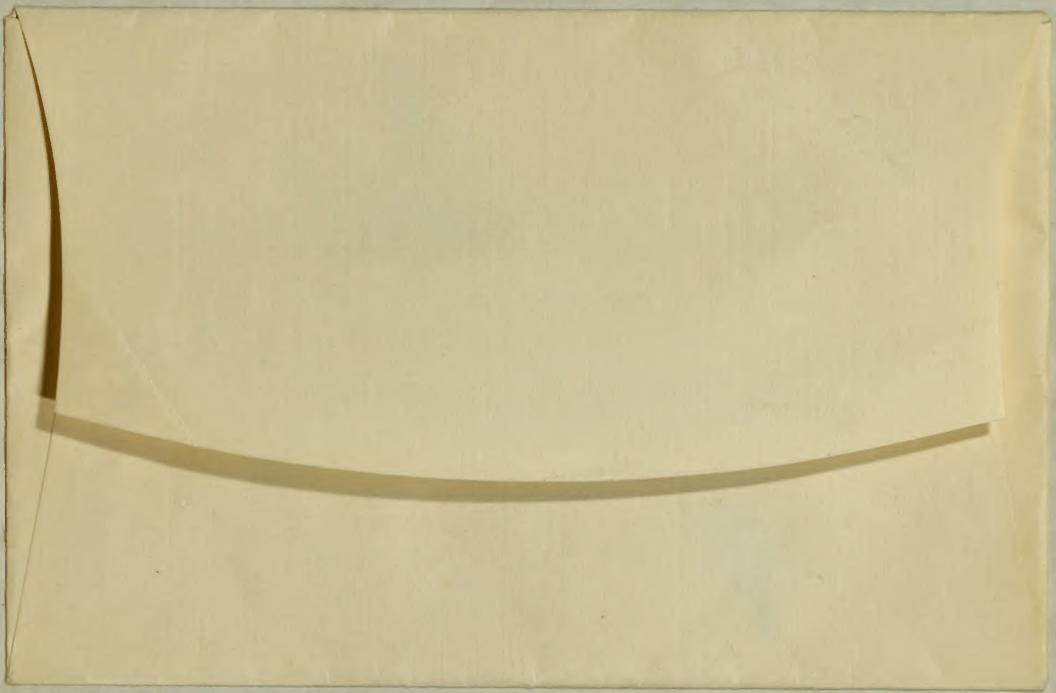
Unit 21

same as - gainful work a day  
you work three times a day, a few  
elements of safe guidance the  
you may work of course

Unit 7

work in service, you may work  
instituted by gainful a sum of as as  
work hours work has, which is equal

work in service the work is divided  
work in service, I mean the work  
-service the service work to work gainful  
work worked hours and in work gainful  
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mosted out to work out to the end of work



Shapes for use in Test 9.

75

Test on new ref sample

Test no.

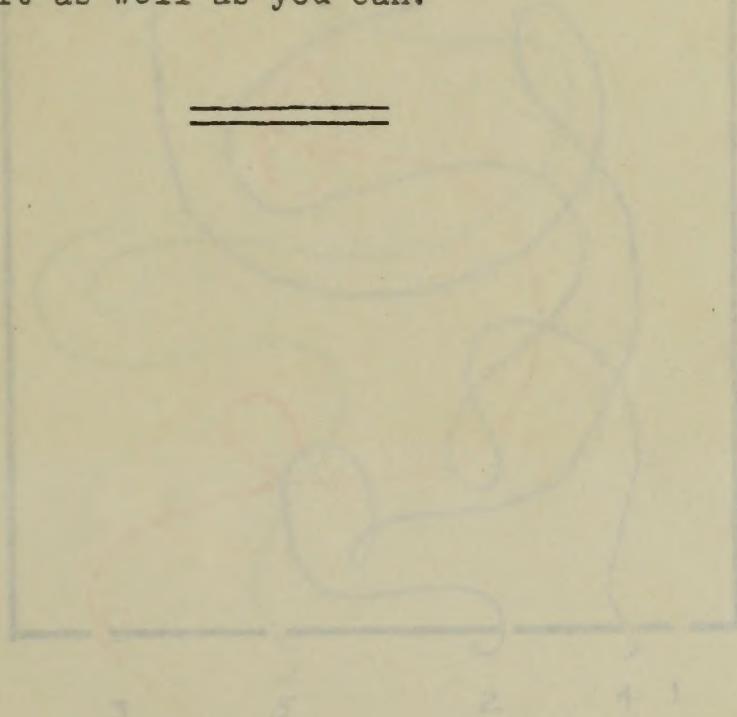
Time.

and put number found at end of line  
beside the name of its color in col-  
umn below. <sup>1</sup>

3 min.

11. Keeping given picture in front of you,  
copy it as well as you can.

15 min.



1. Diagram on following page.

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sim E

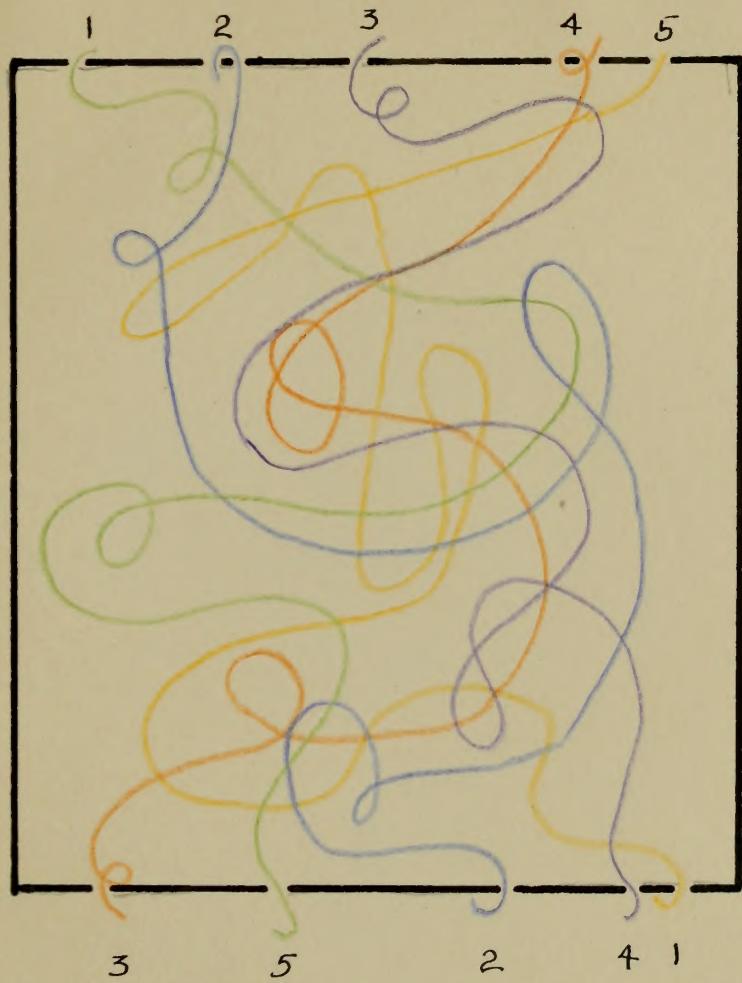
I. waiced amu

sim E

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- 1-
- 2-
- 3-
- 4-
- 5-







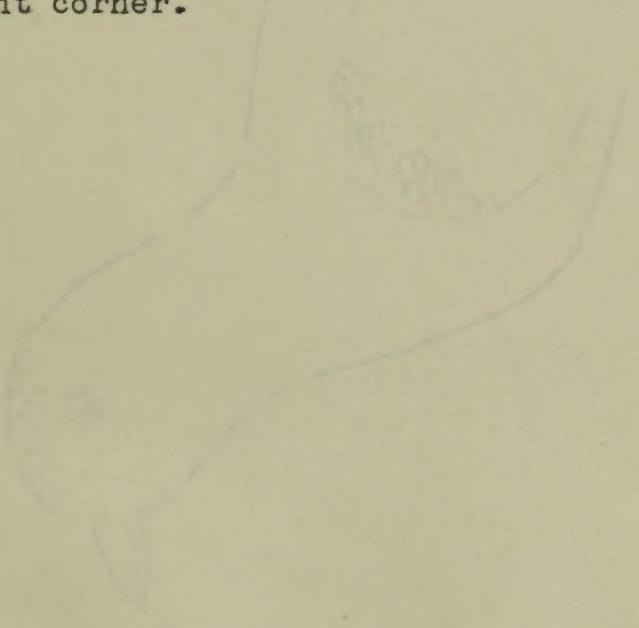
Key For Scoring of Test

Results

Part I

Test no. 1 Score

Hold the drawing of a pigeon next to the samples shown on the following four pages. Find the sample which resembles the drawing at hand in the most respects and record the score found in the lower right corner.



Very full Bookline of Leaf

Revolving

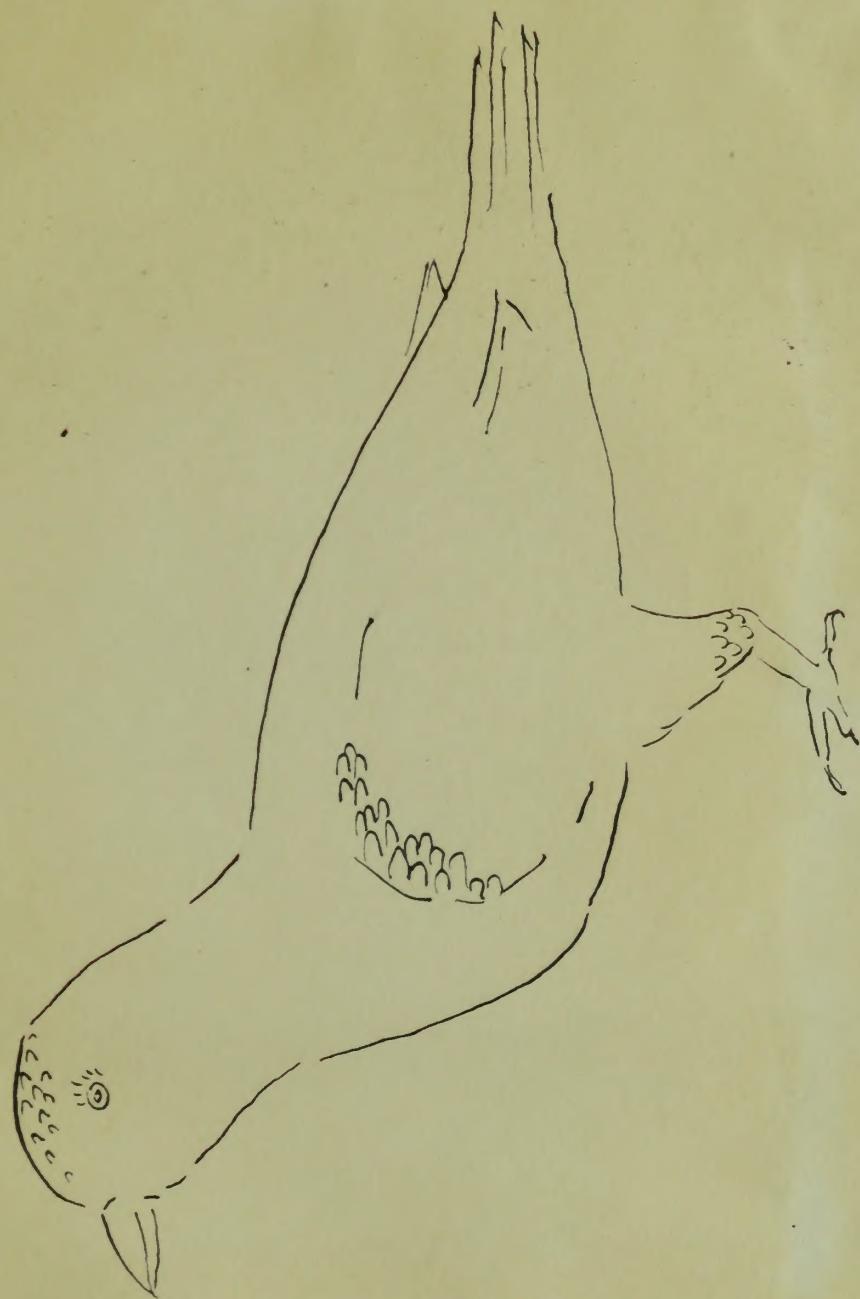
I find

possible

I can just

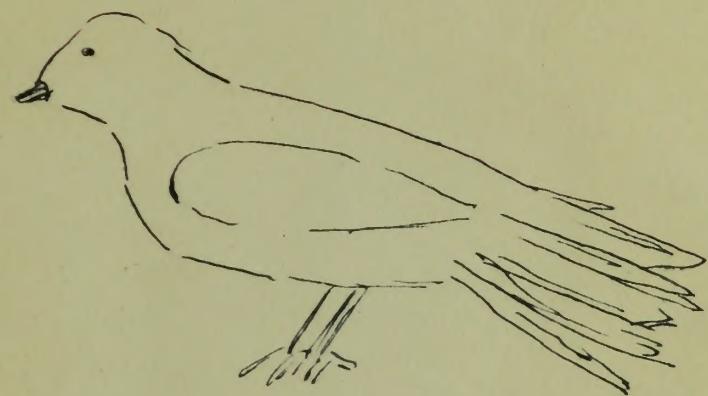
end of each meeting a lot of minutes and time  
being used in the following form bases  
of time in minutes the time between the  
end of each meeting and the time for the  
next meeting

100

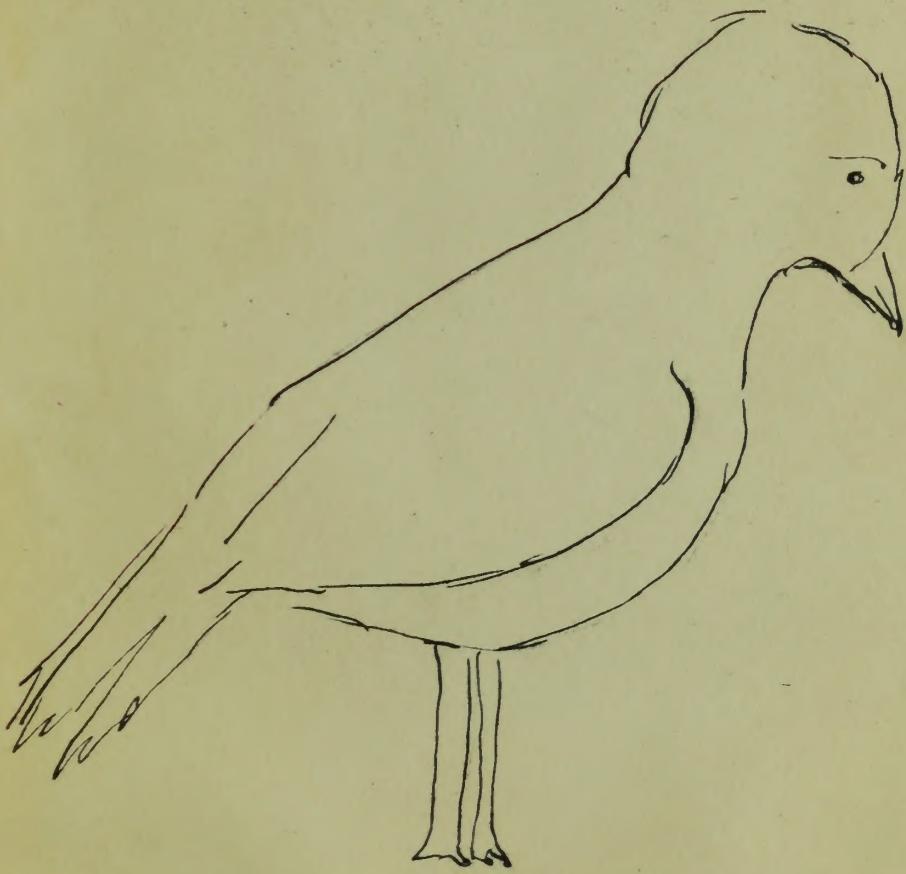


e

e









26





Test no. 2

Score

Hold the drawing of a girl in costume next to the samples shown on the following four pages.

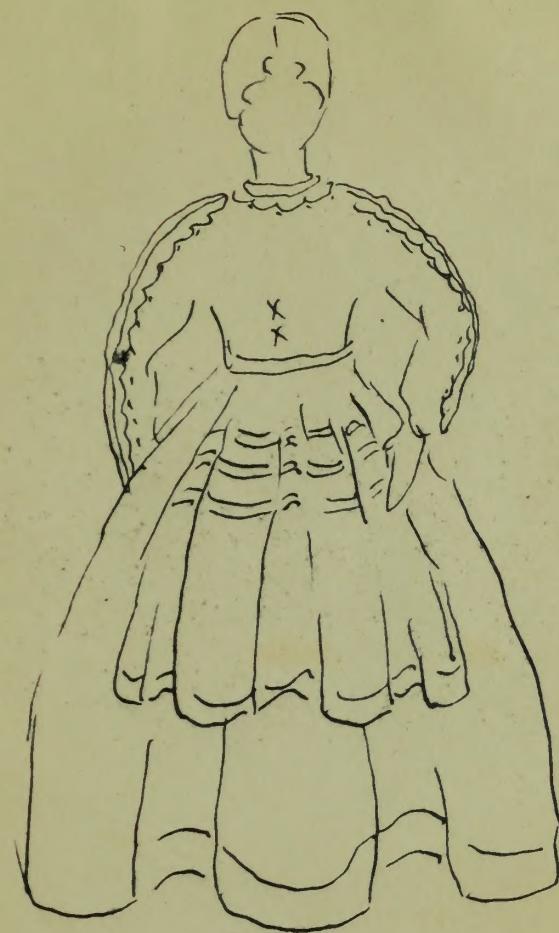
Find the sample which resembles the drawing at hand in the most respects and record the score found beneath it.



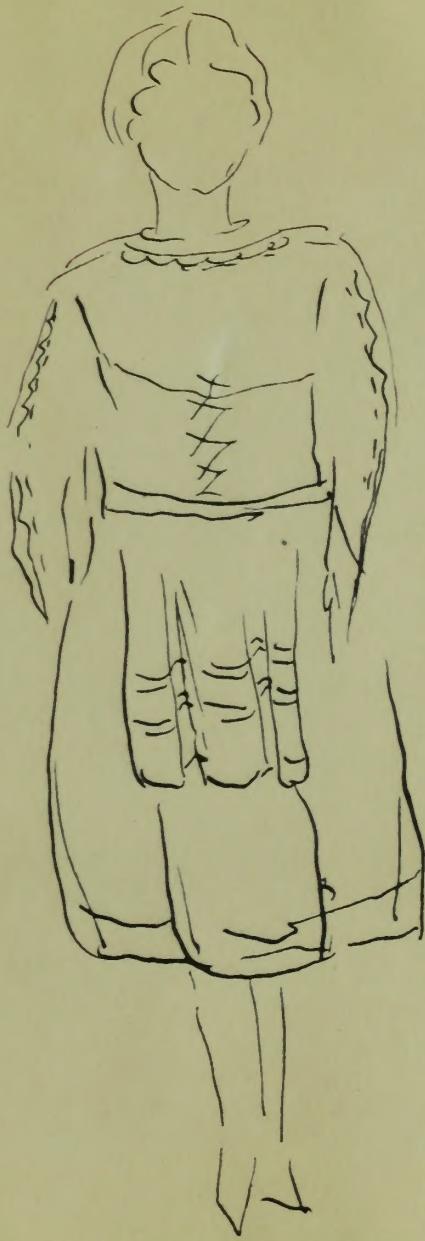
Score

2 on last

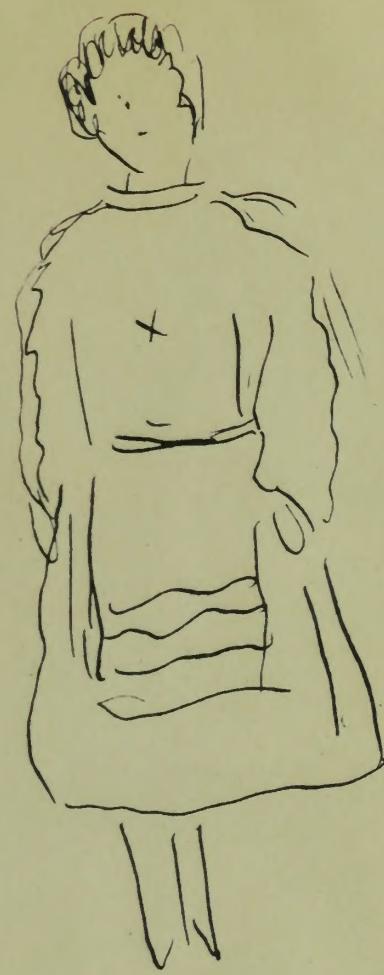
skew numbers at first & to numbers at first  
several more following not in order sometimes and of  
the numbers and sequences hold signs and both  
times and places has subsequent from and in final  
it divided into





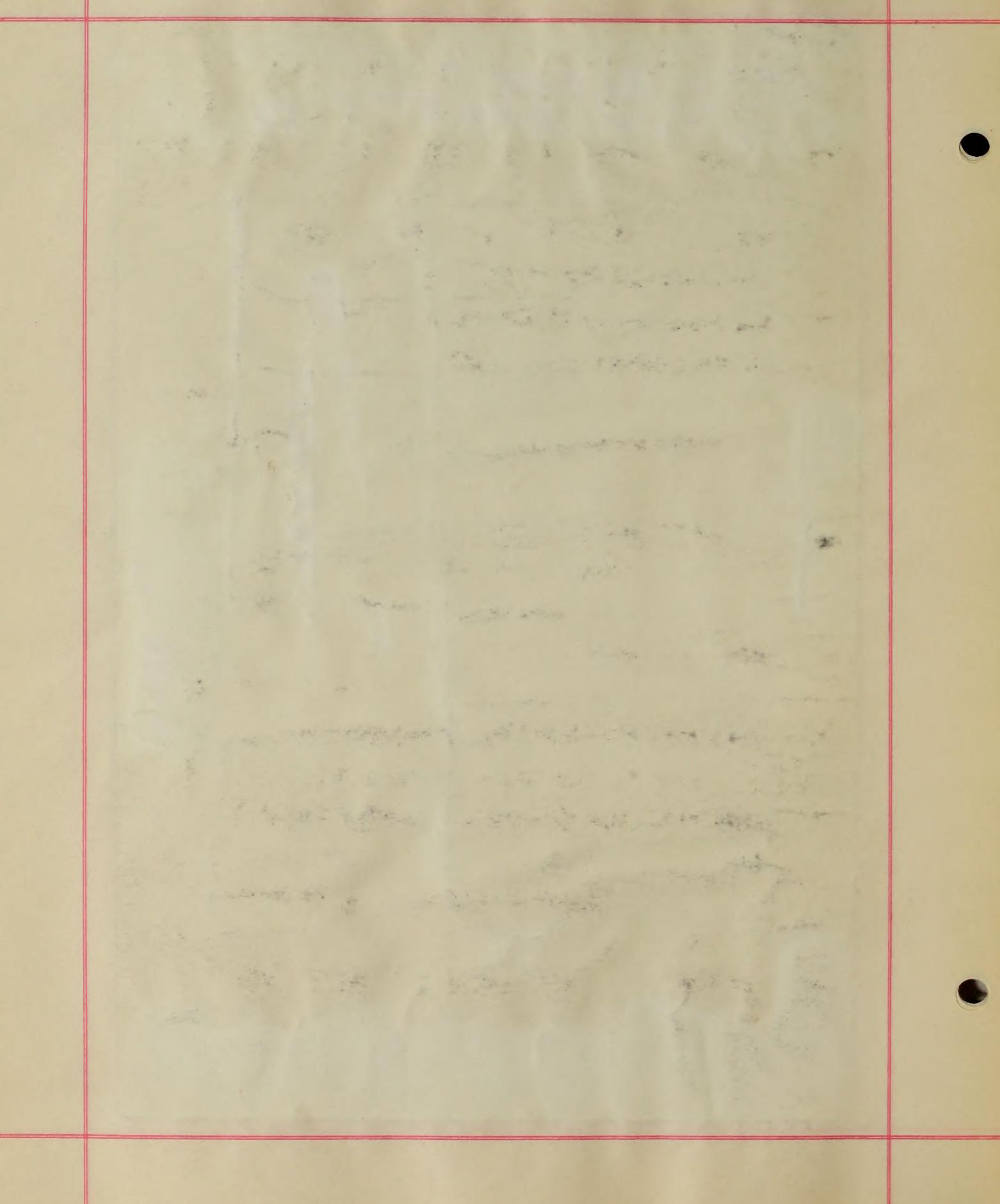












Test no. 3Score

Each of the following questions must be answered by yes or no, in the tester's judgment, and given full or no value for each point. Check each affirmative answer.

Points

1. Has pupil followed directions - attempted problem asked for regardless of how well? 5
2. Has pupil selected the essential elements of the problem even though it may be lacking in some details? 15
3. Has pupil shown a free and consistent use of medium-pencil, crayon, or watercolor, though technique may be poor?
4. Does paper show direct, simple portrayal, drawing or arrangement - not worked over or erased to an undue degree? 5
5. Does work show fresh thought or originality? 10
6. Does work show pleasing arrangement of subject matter, margins, spacing, etc.? 10
7. Does work show ability to discriminate differences in color? 10
8. Has pupil a visual memory of form, as shown in this test? 15



40

Test no. 3 (cont.)

Points

9. Does work show that pupil has power of observation? 15

10. Does work show some skill in the handling of the medium used - technique? 10

---

Possible score - 100

Total score checked

Record above

Answers

Test on Test

8. Does Mary work part time for a few hours or

9.

opera-tions

10. Does Mary work some extra time in the evenings

11.

temp-tions - been asked out to

12. Does Mary work overtime

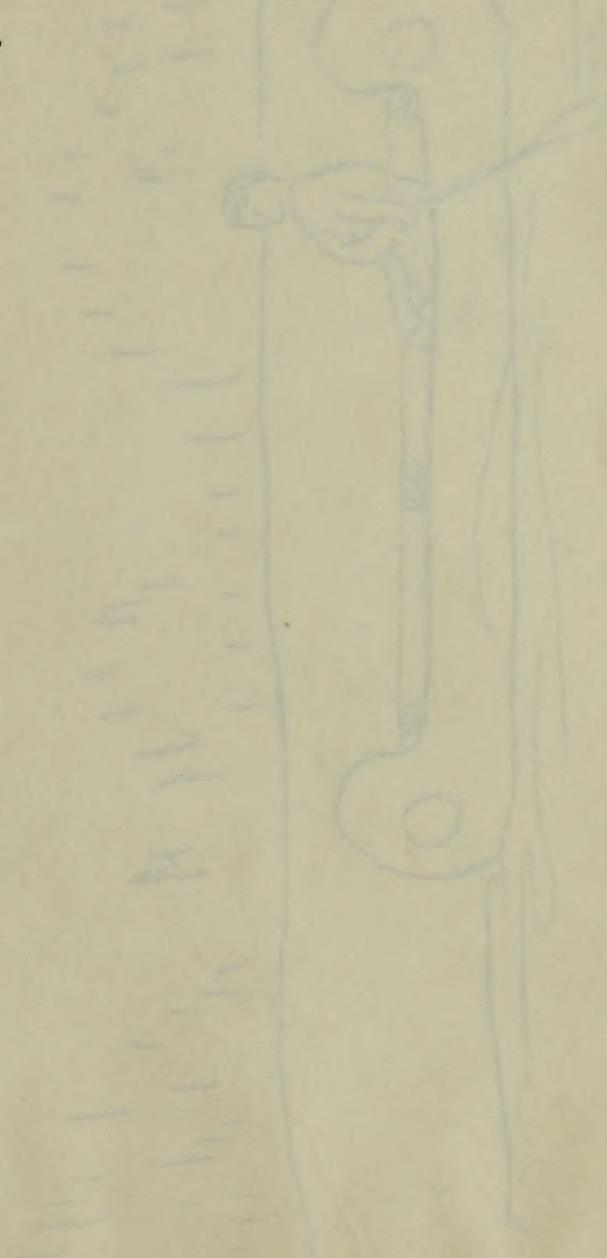
13. Does Mary - 100

14. Does Mary work overtime

Test no. 4

Score

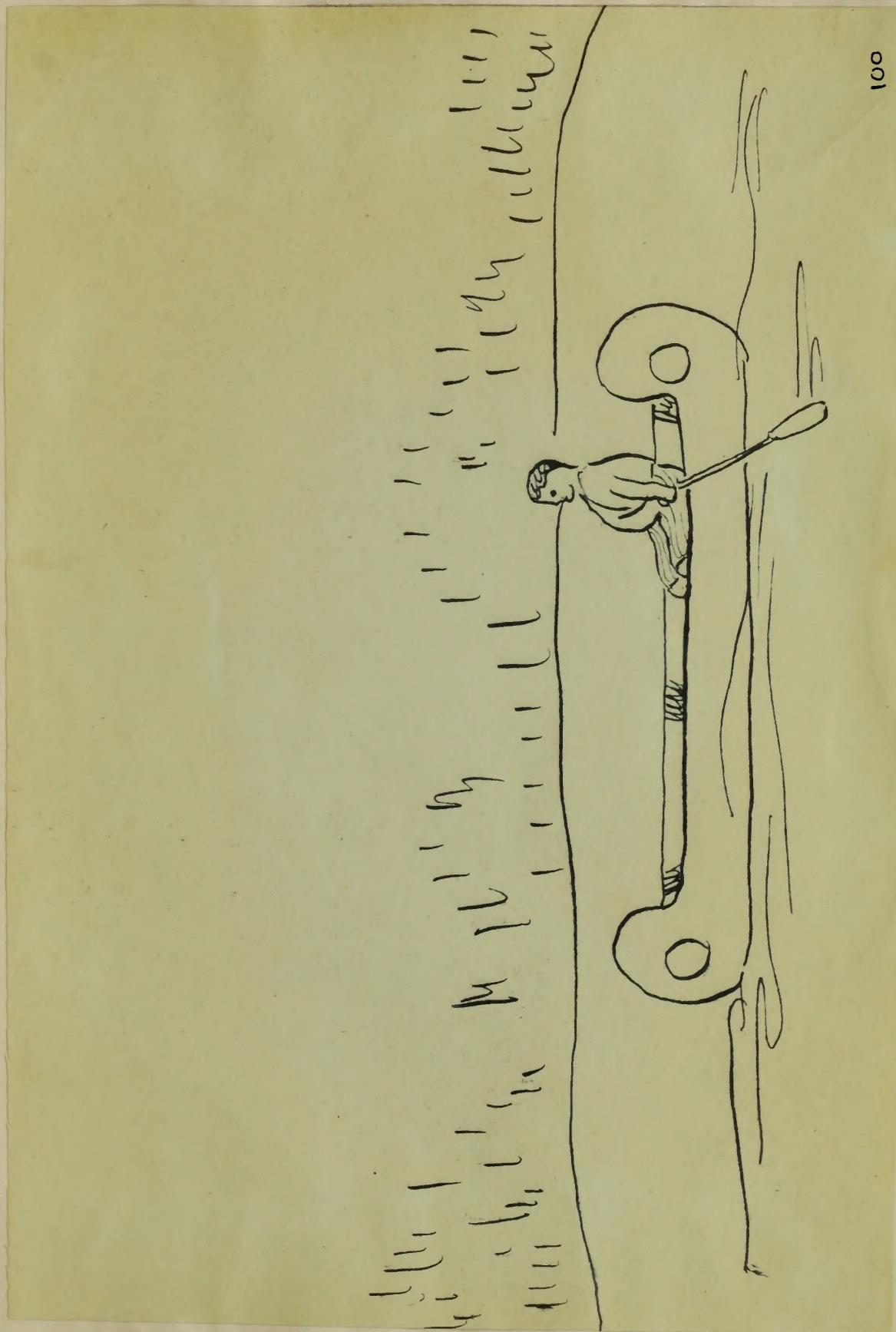
Hold the drawing of a boy paddling a canoe next to the samples shown on the following four pages. Find the sample which resembles the drawing at hand in the most respects and record the score found in the lower right corner.



Scope

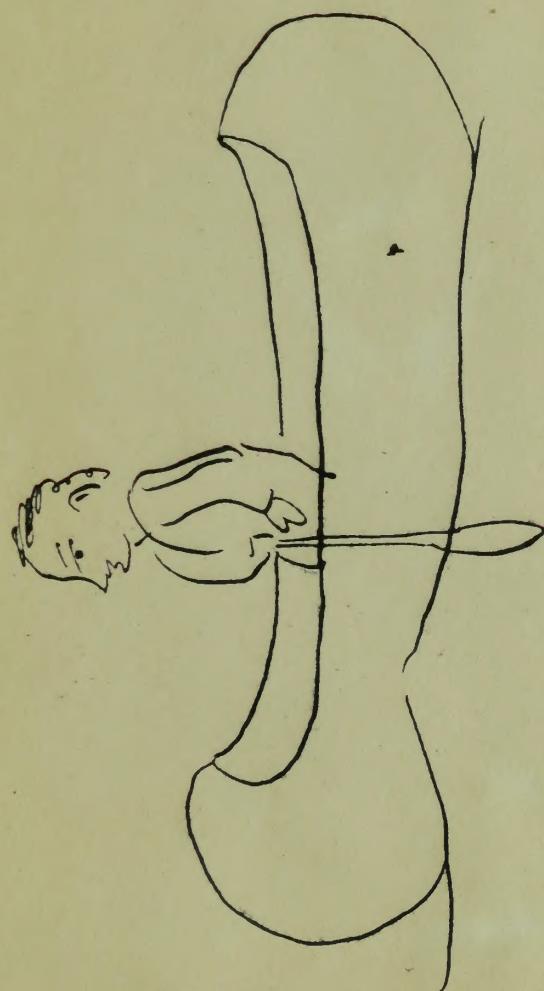
Area of Test

þxer sono a gñichaq qod a lo gñawitq ent dñiq  
sebag mut gñawilliq ent no awoq aelqan ent qñ  
hñan ta gñawitq ent seidmaet hñinw aelqan ent hñin  
nt hñan siroa ent broosq an aelqan ent qñ  
qñ hñan hñan hñan hñan hñan hñan hñan hñan hñan hñan



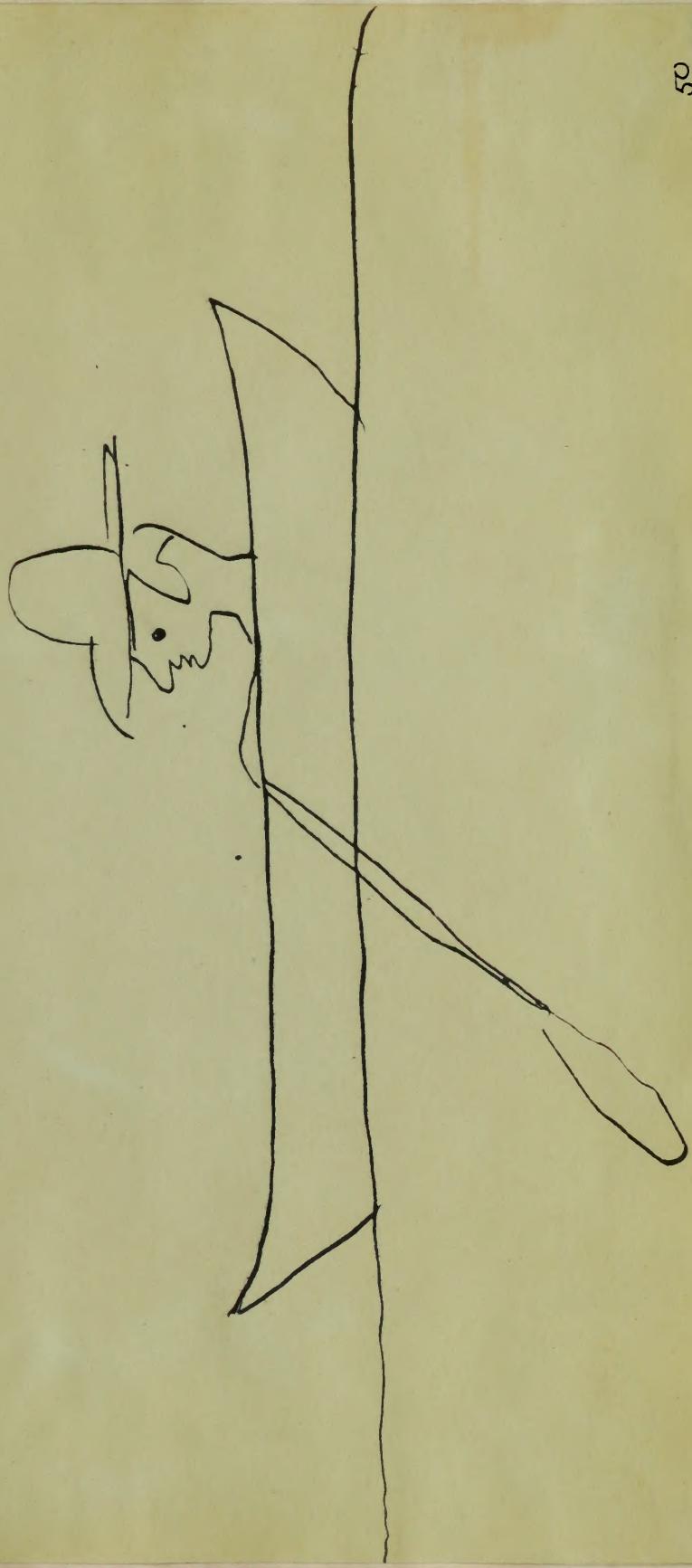


75-

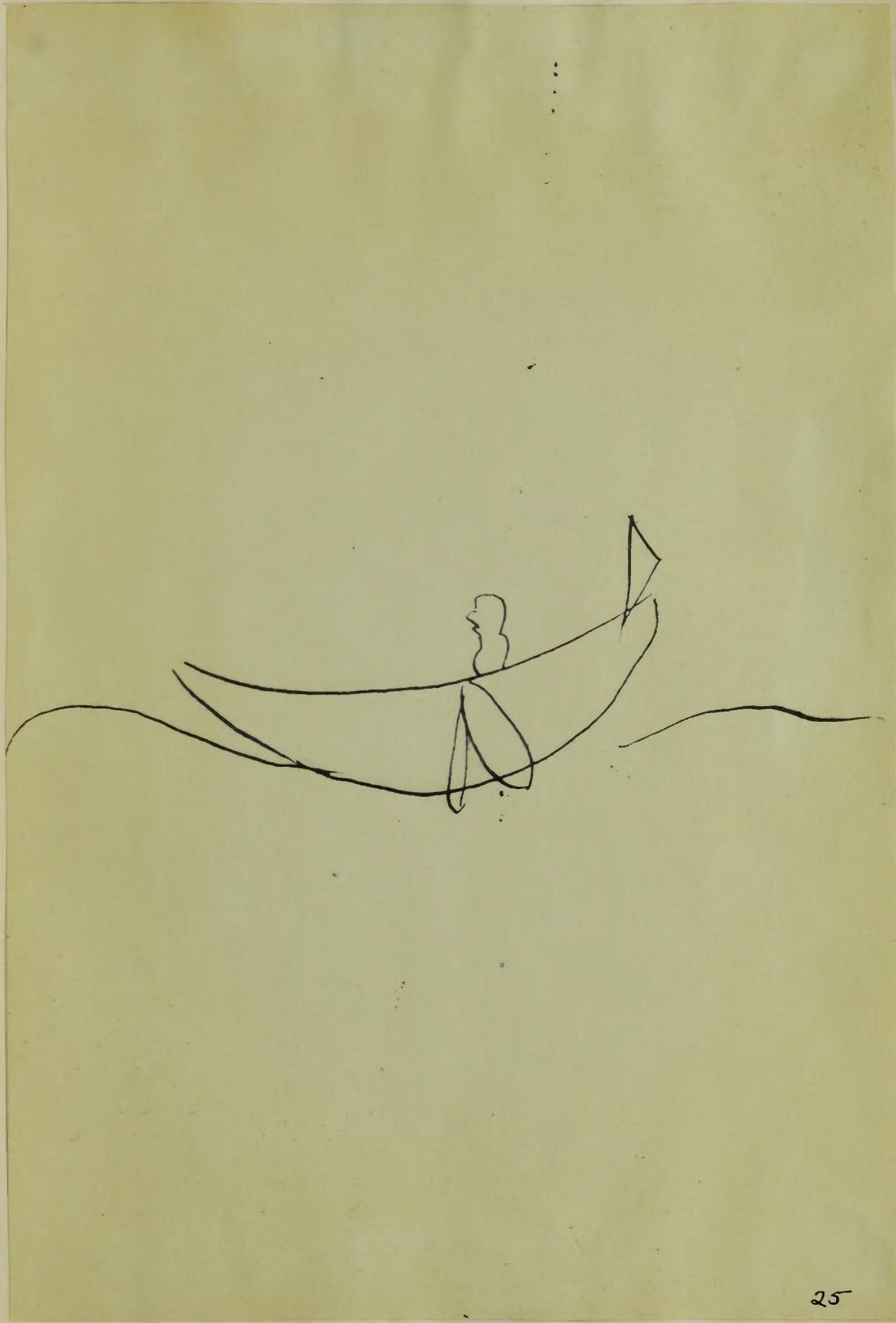




50









Test no. 5

Score

Hold the drawing of a girl sitting at a table, eating, next to the samples shown in the following five pages. Find the sample which resembles the drawing at hand in the most respects and record the score found in the lower right corner.



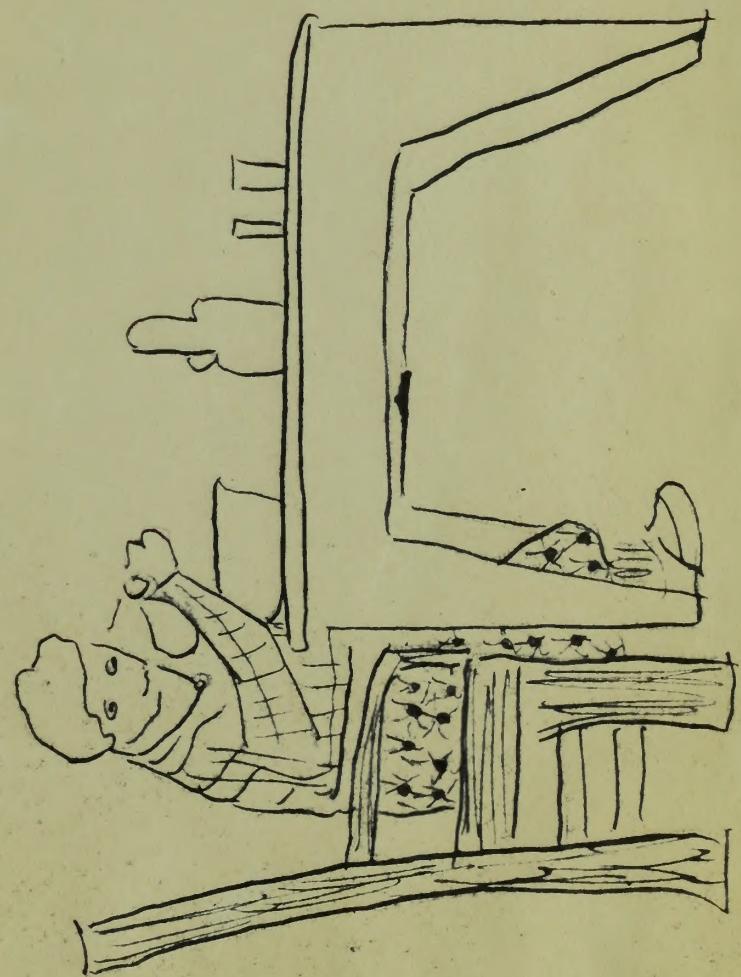
PROOFPROOF

seidat a te gniwirb Iriq a 'le gniwirb ent bloH  
gntwollici ent nt awore selomee ent of xken ,gntse  
ent seidmedet nolaw elgma ent Iriq . segeq evit  
ent hroser lns waqqanet jahm ent ai hawd ta gniwirb  
tunco tufit kewol ent nt hawol trosa



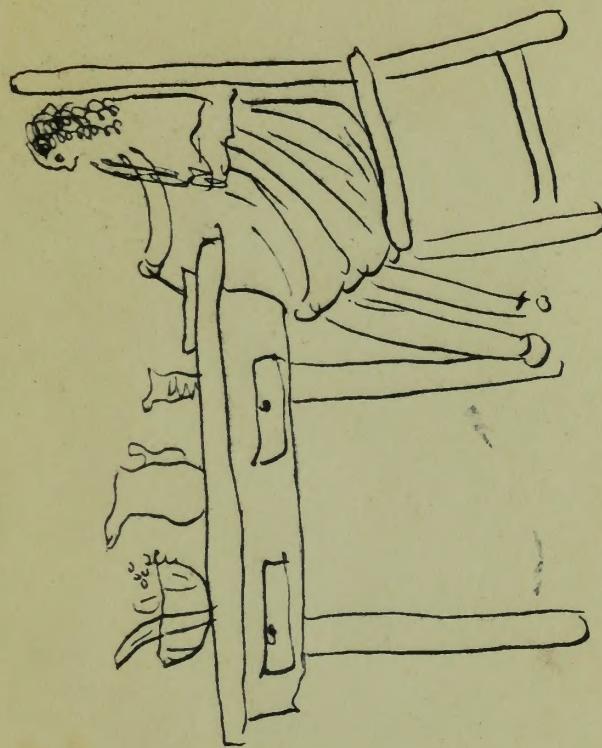


75-

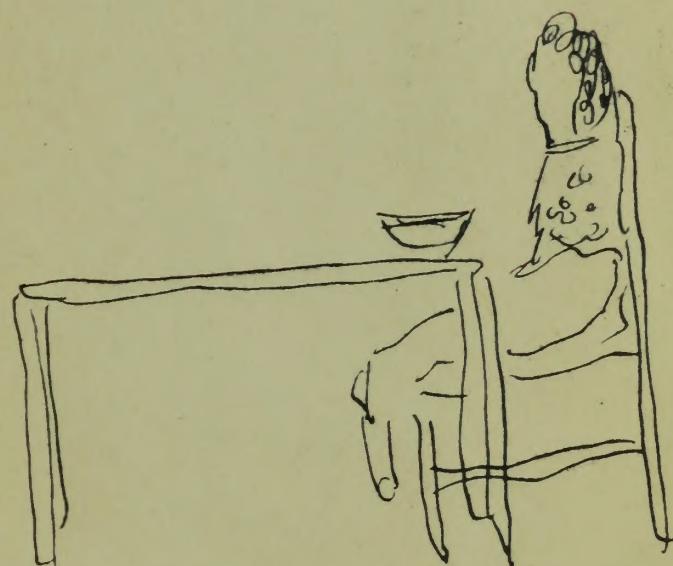




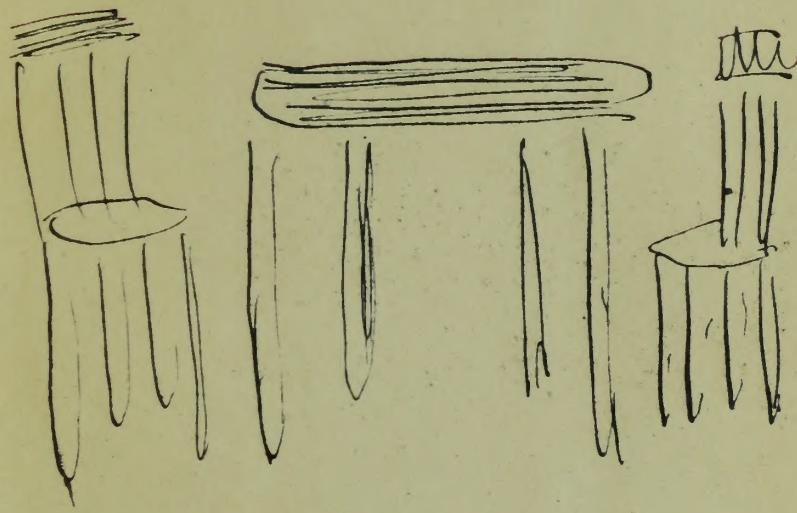
50











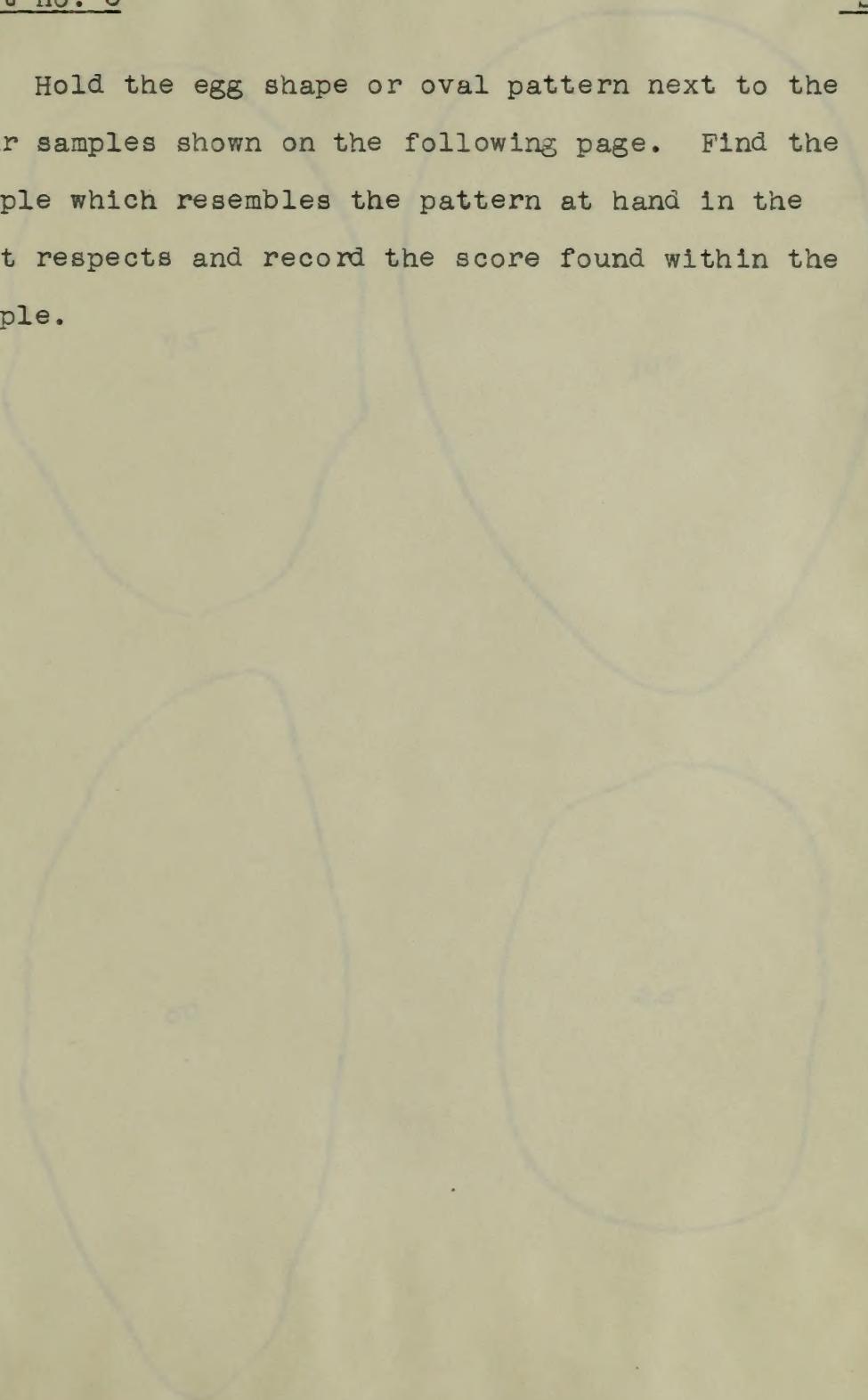
Boston University  
School of Education  
Library



Test no. 6

Score

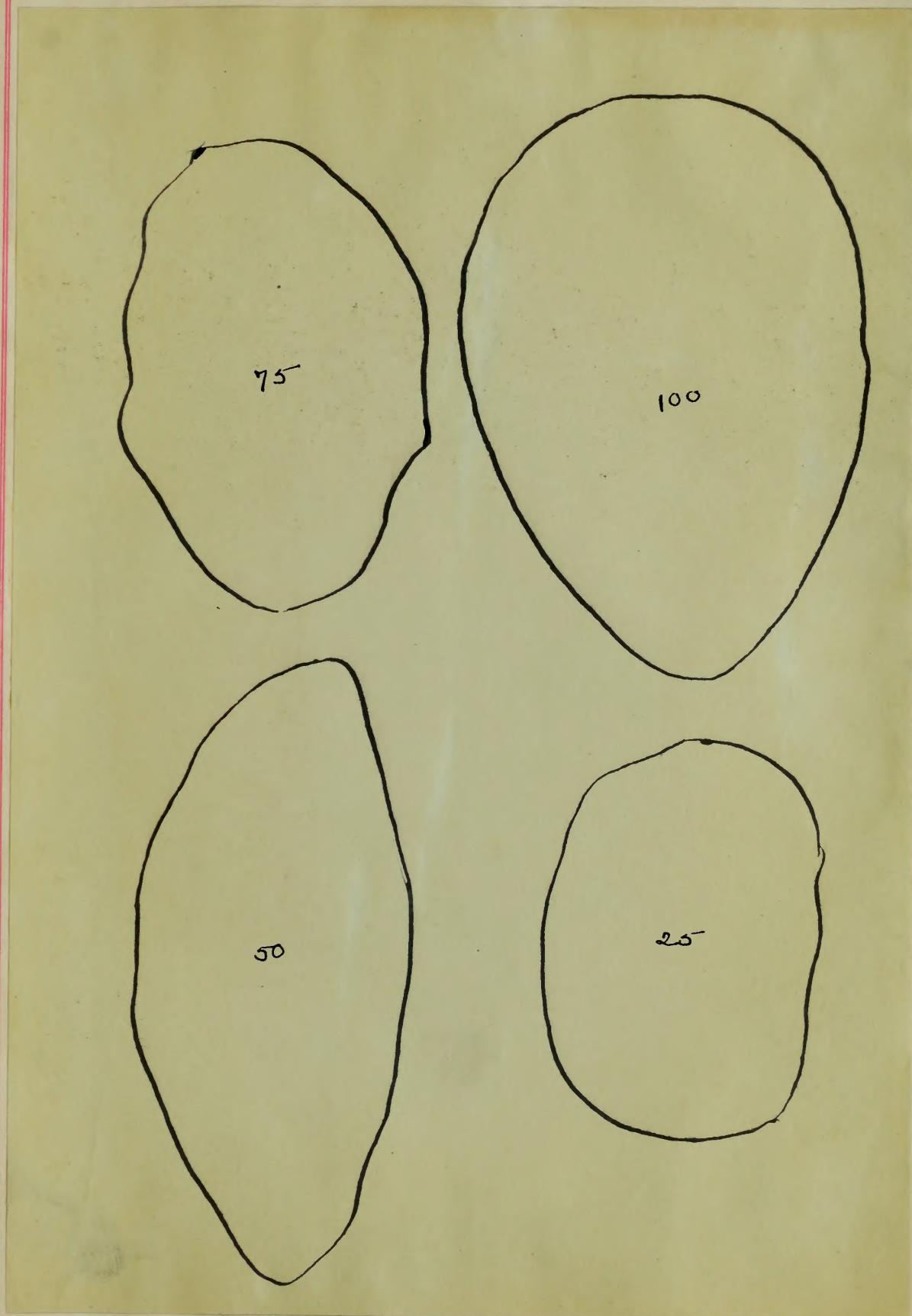
Hold the egg shape or oval pattern next to the four samples shown on the following page. Find the sample which resembles the pattern at hand in the most respects and record the score found within the sample.



books

on fast

ans of xken miettsq levo no eggsna zze edz bieH  
ant lmi . zze gatwolli ant no aword sefymas lom  
ans ni eman de miettsq ant zelwoset miettsq alqas  
ans minitiw lmiot enosz eni biecen lmi aqaseta xom  
. aqaseta





Key for Scoring of TestResultsPart IITest no. 7Score

Hold the cut vase form next to the samples on the following two pages. Find the sample which resembles form at hand in the most respects and record the score found within the sample.

test to print to test

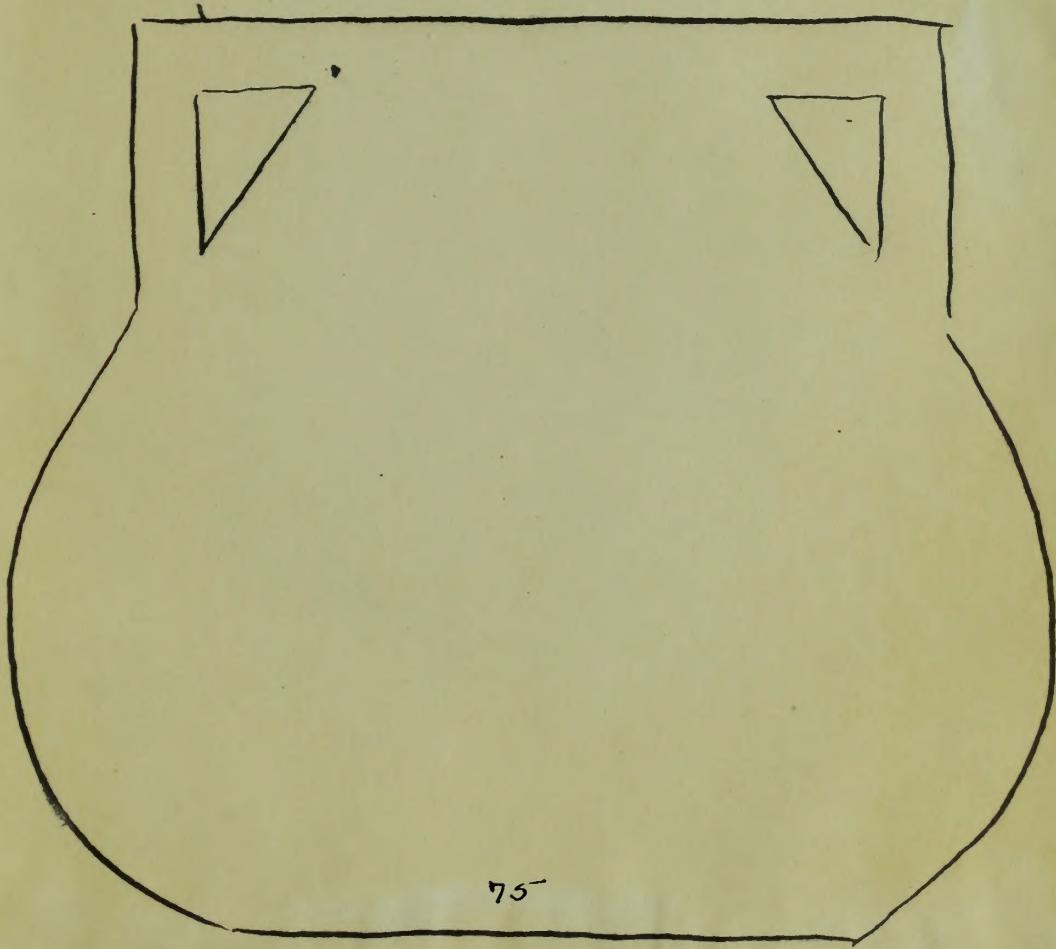
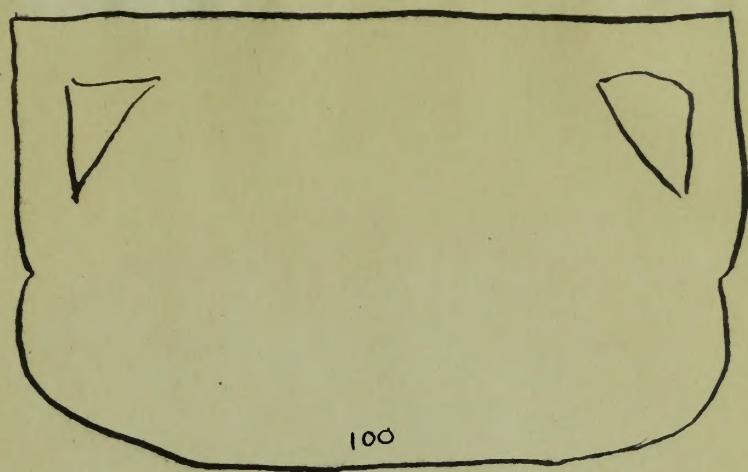
atlasP

test II

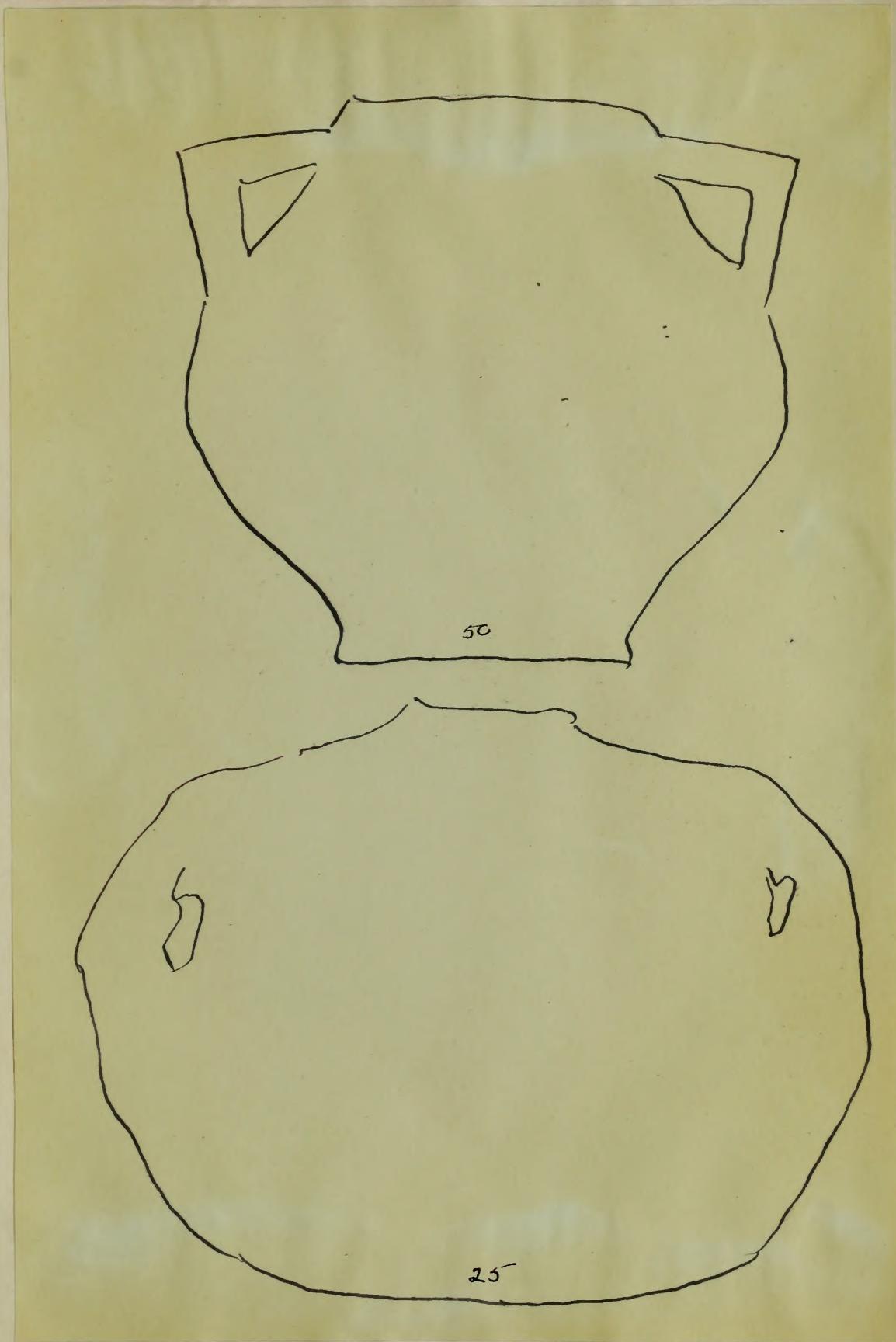
score

test to 1

no sefmae odd od omen with easy juc ent blod  
-en dlinw elqesa ent hni' . sebaq awf gniwolfoi ent  
dicest juc elqesa juc ent al hand fa niet sefmae  
elqesa ent nifliw banot enoda ent









Test no. 8

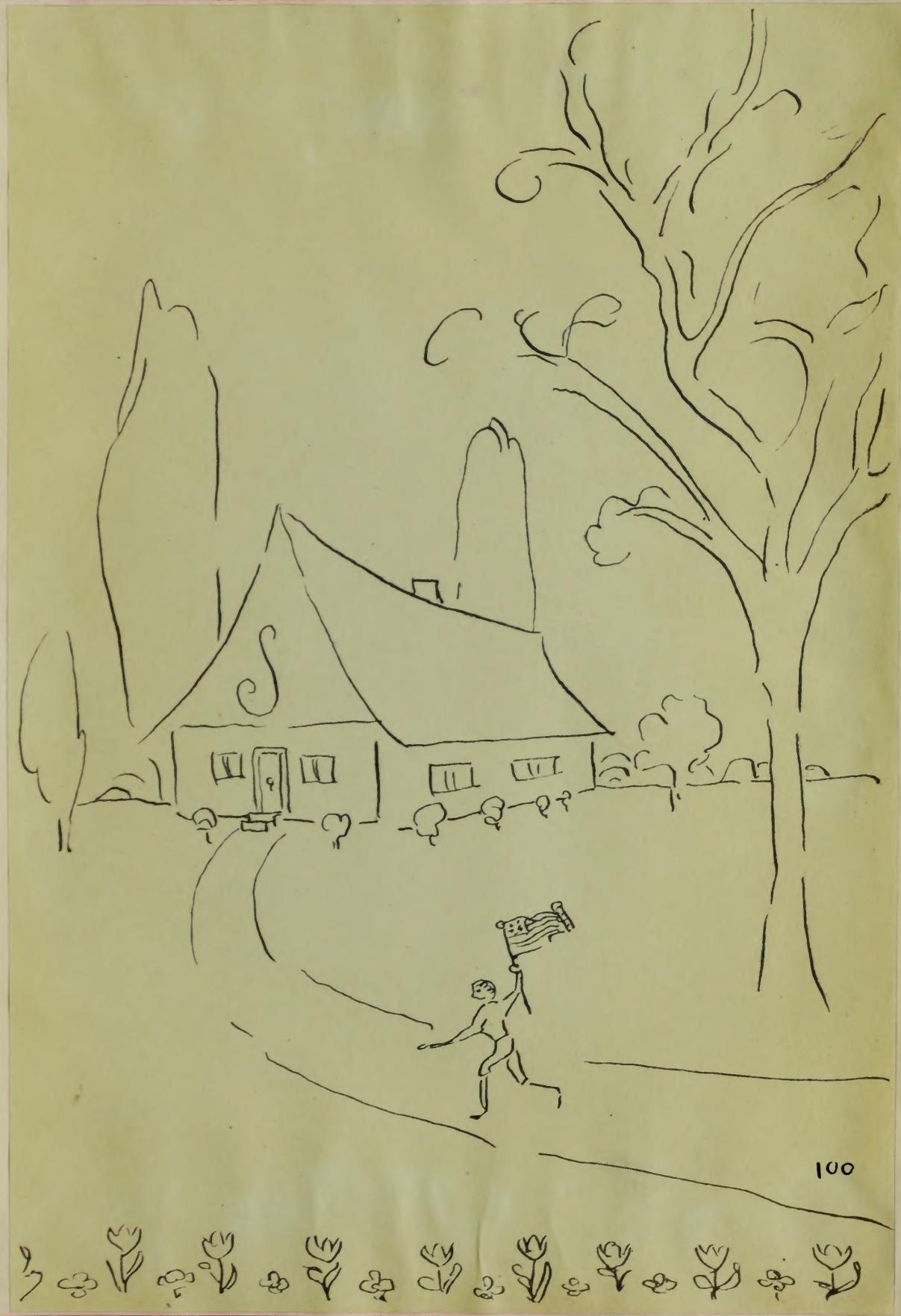
Score

Hold the drawing at hand next to the samples shown in the following five pages. Find the sample which resembles the drawing in the most respects and record the score found in the lower right corner.

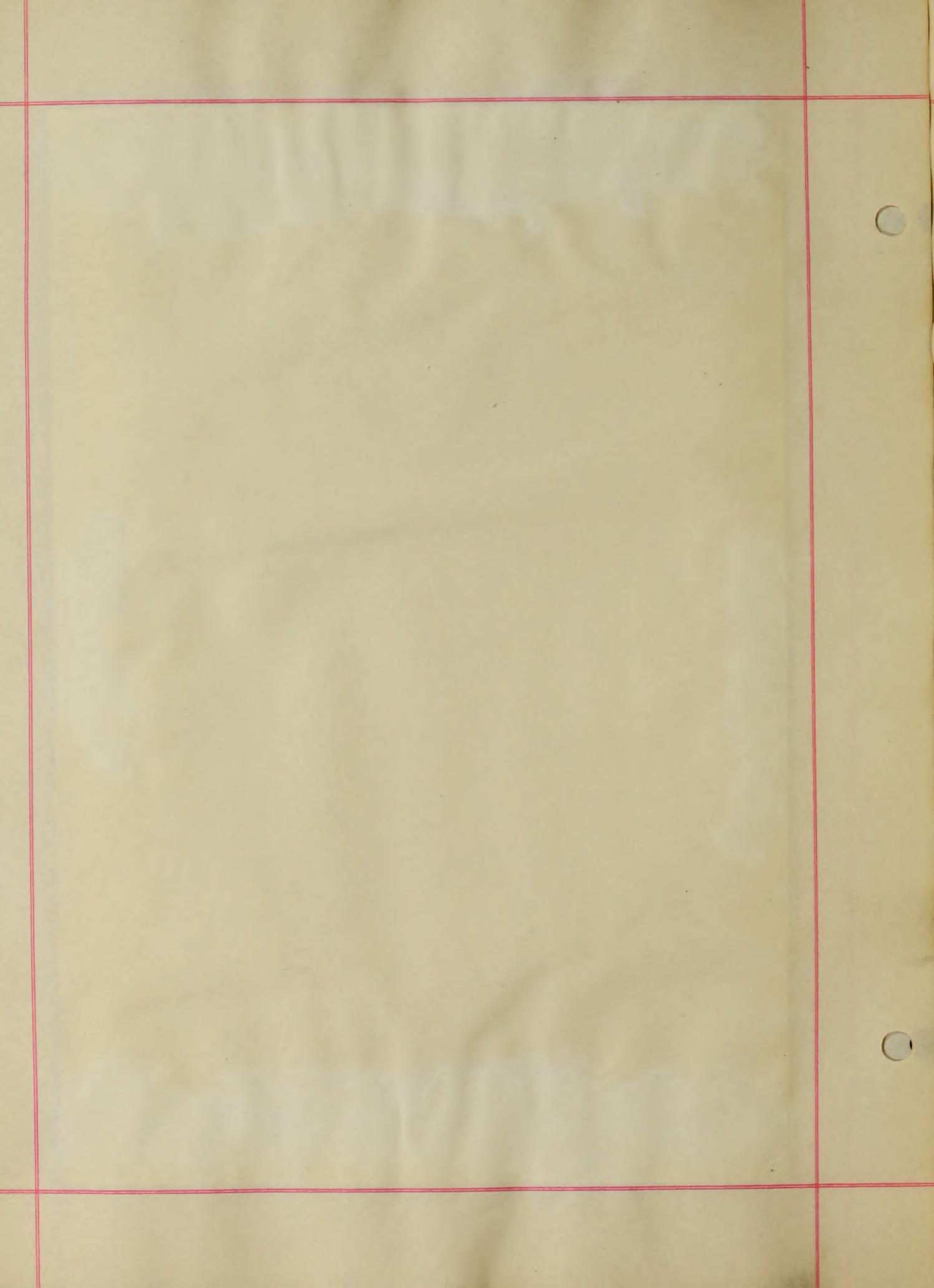
Second

On the

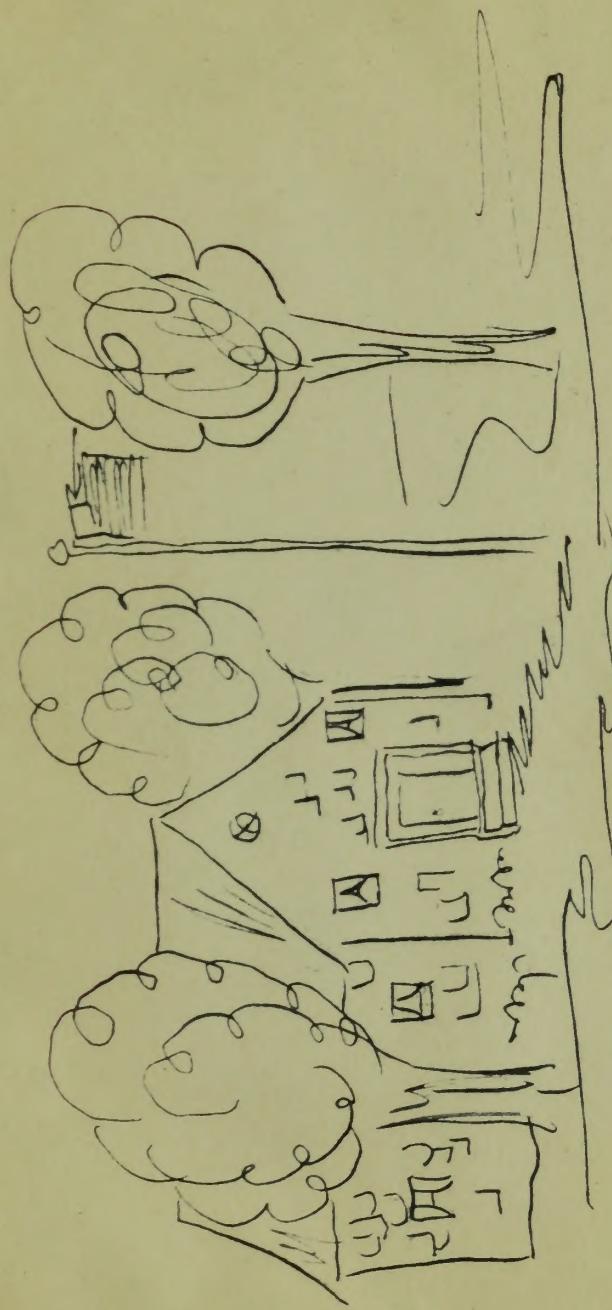
Second and on the road to Kintore and then  
across the hill, across the hill, across the hill, and at last  
the village that is of Kintore and a distance now  
crossed the road and at last seen and driven

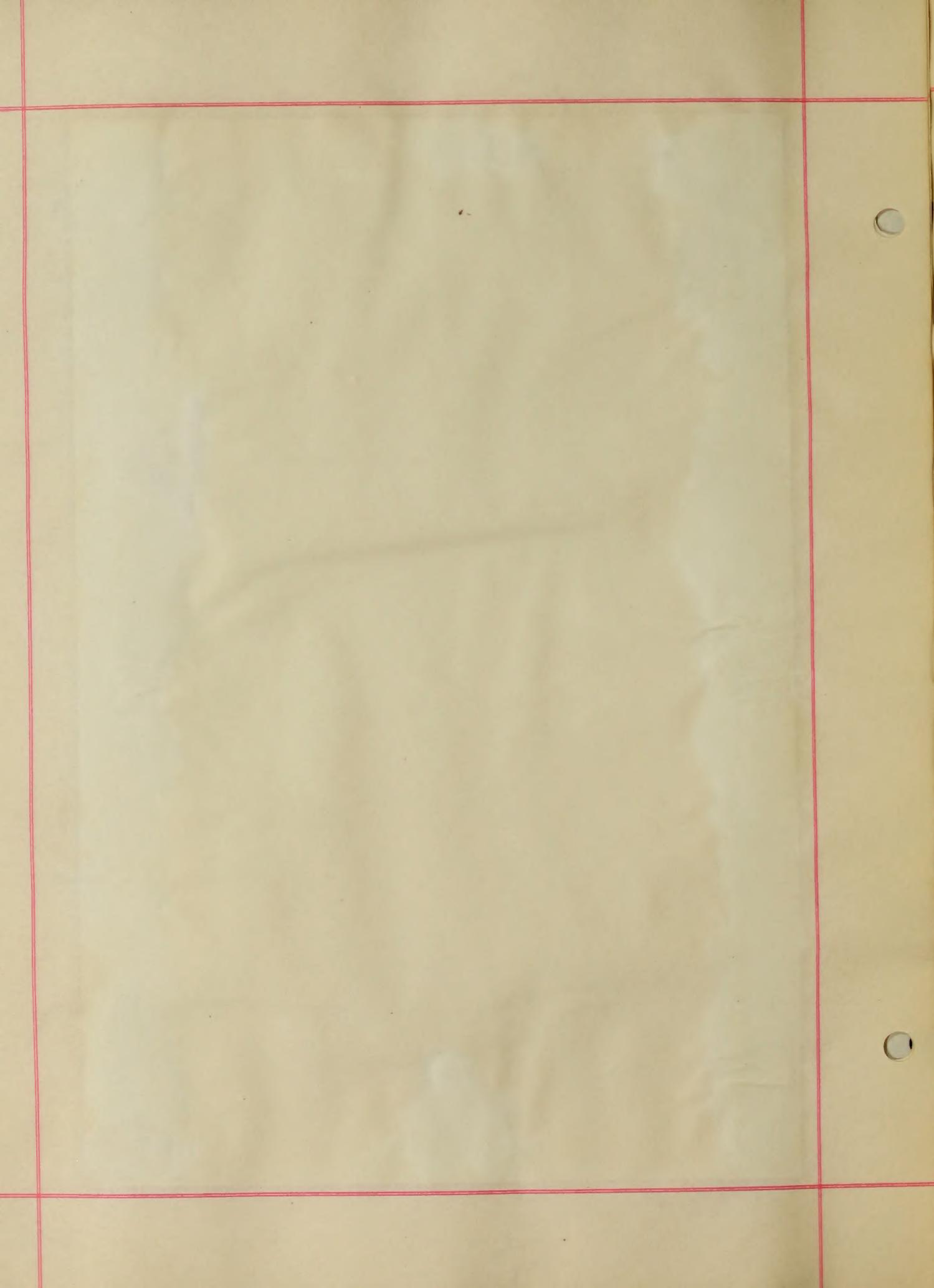


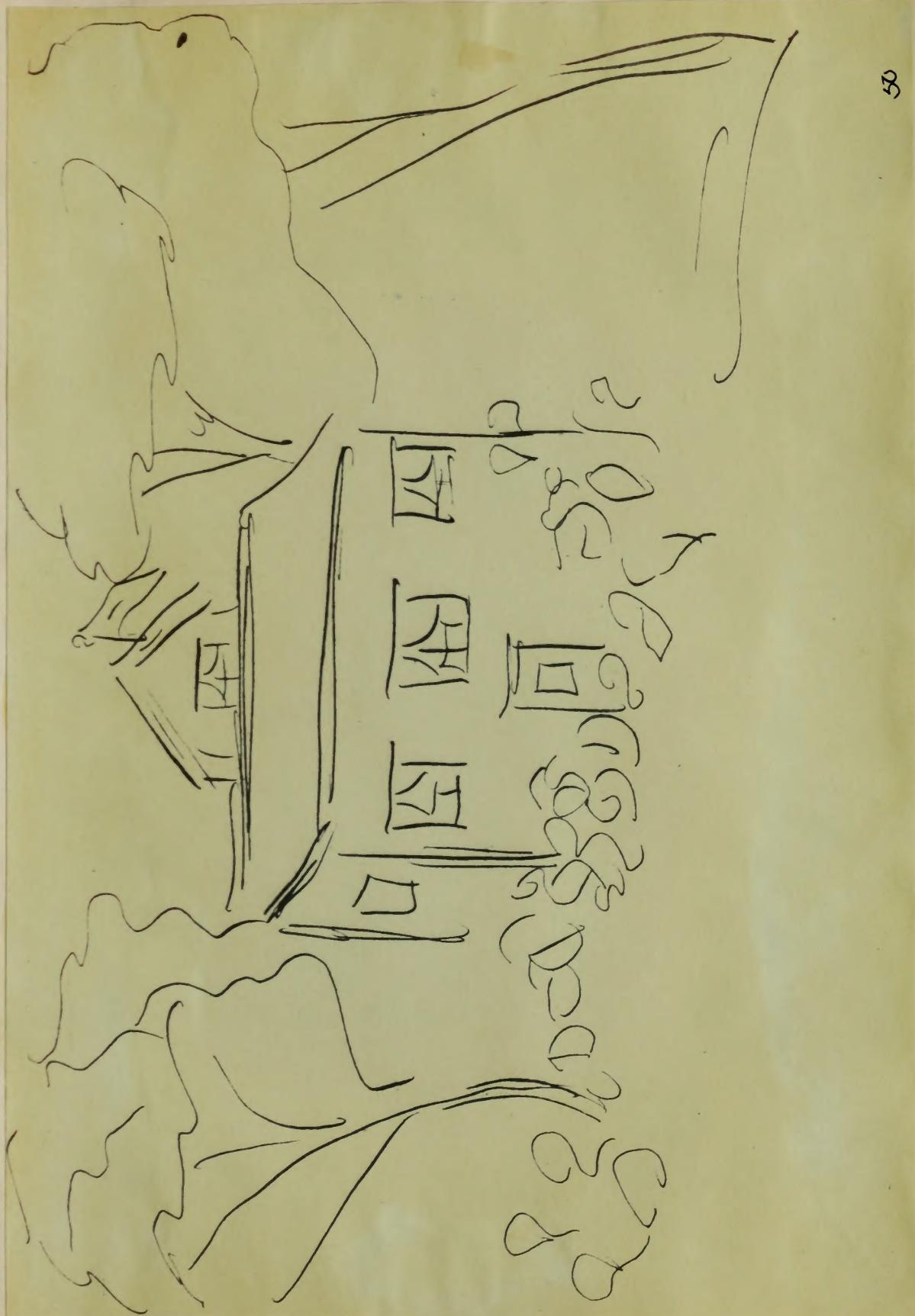
100

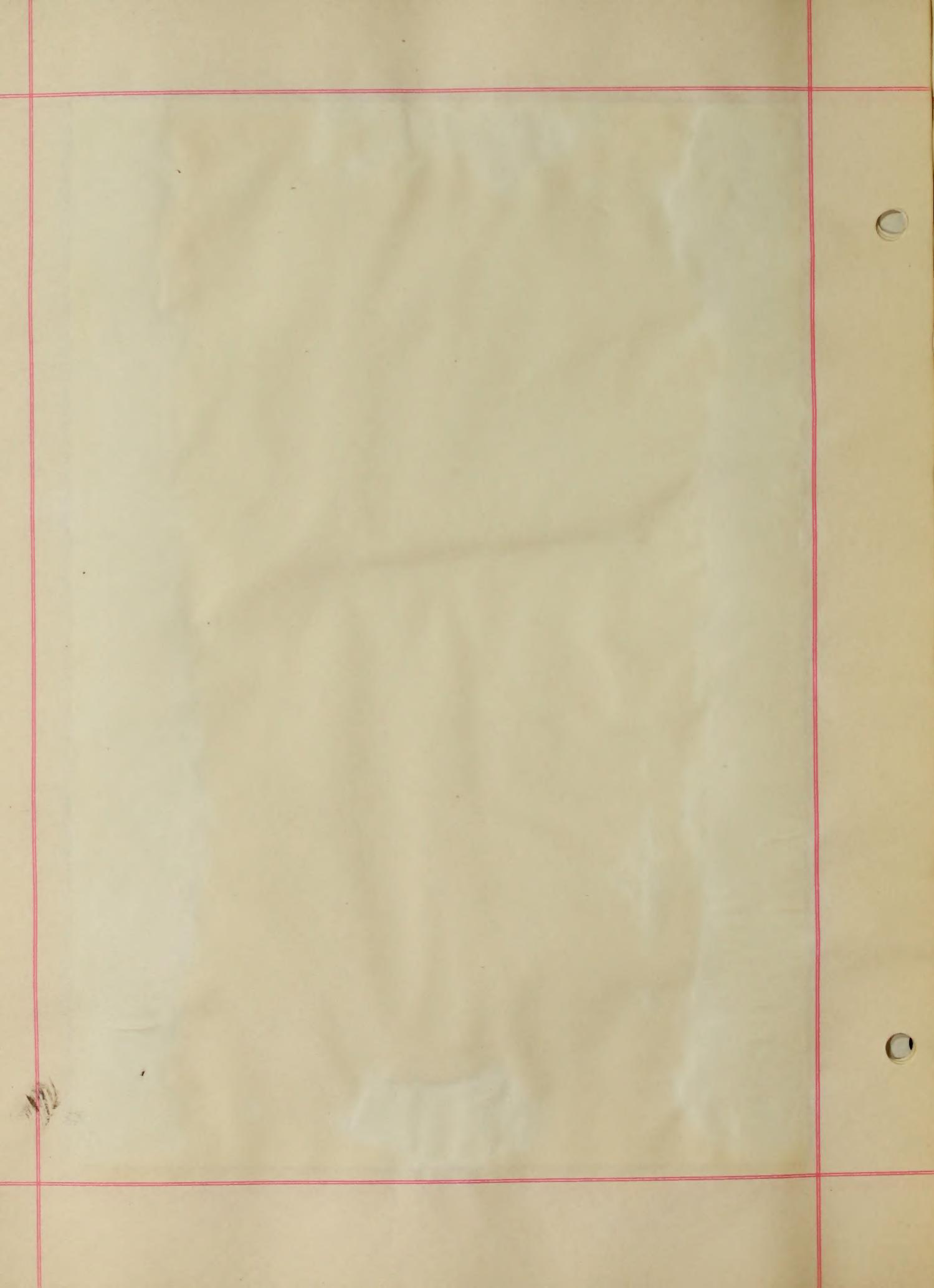


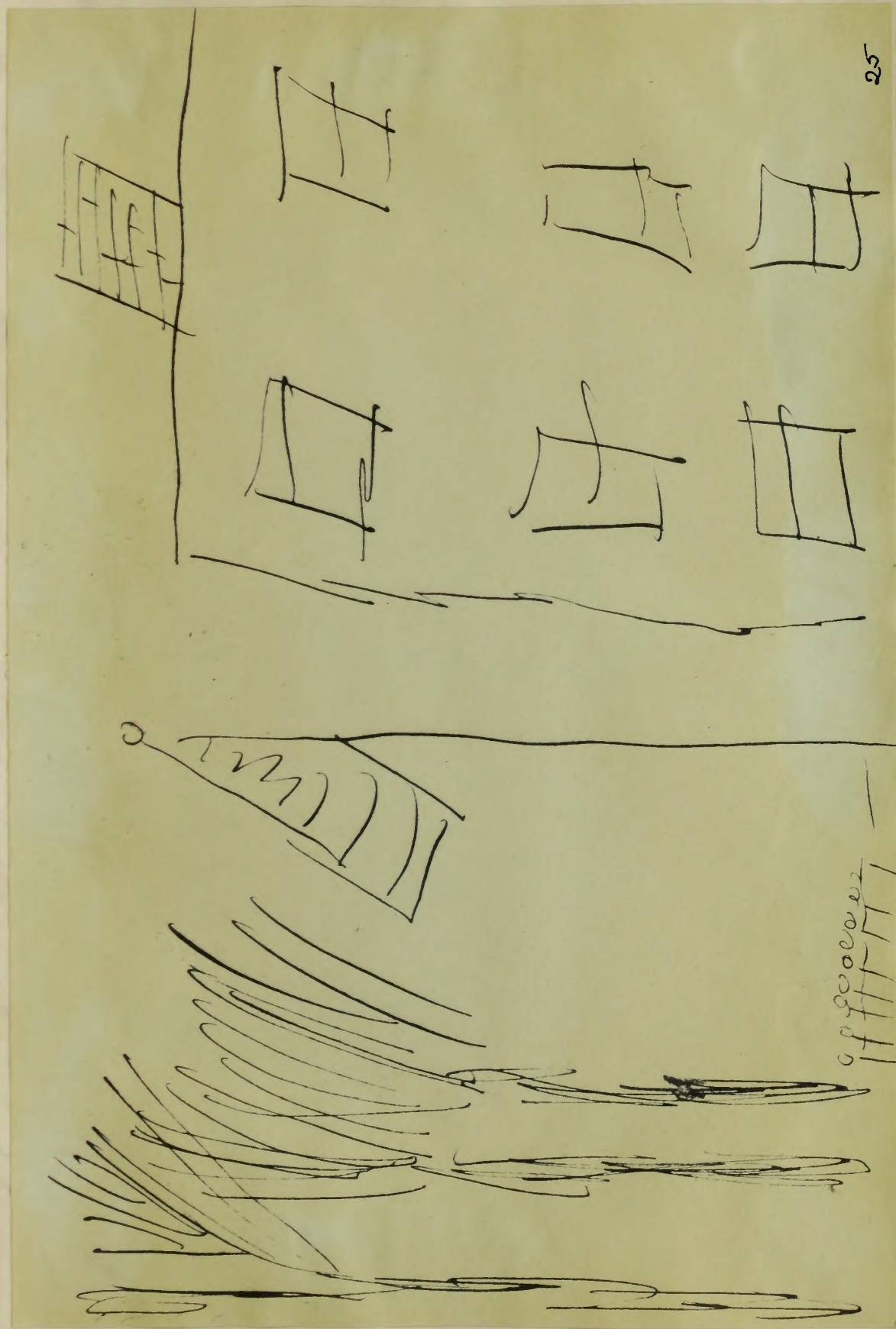
75

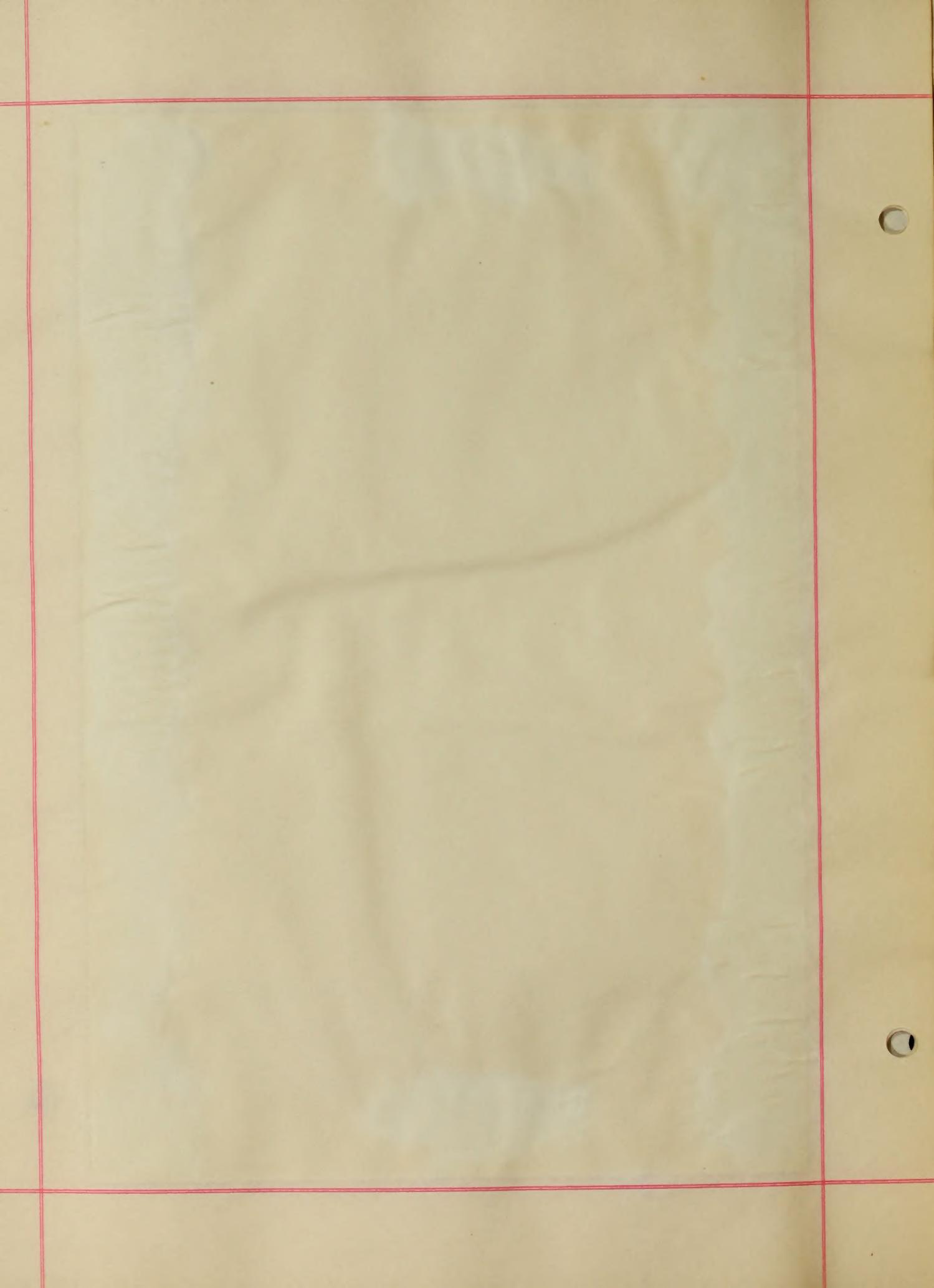


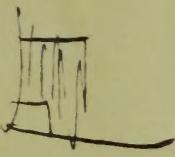




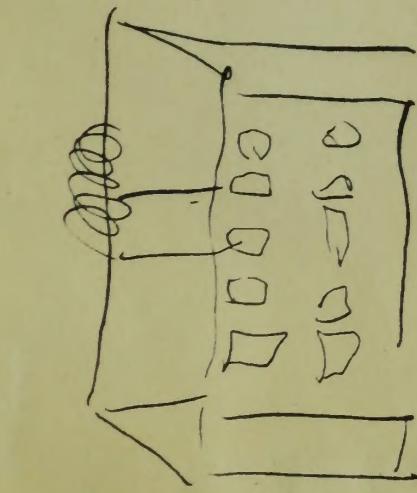
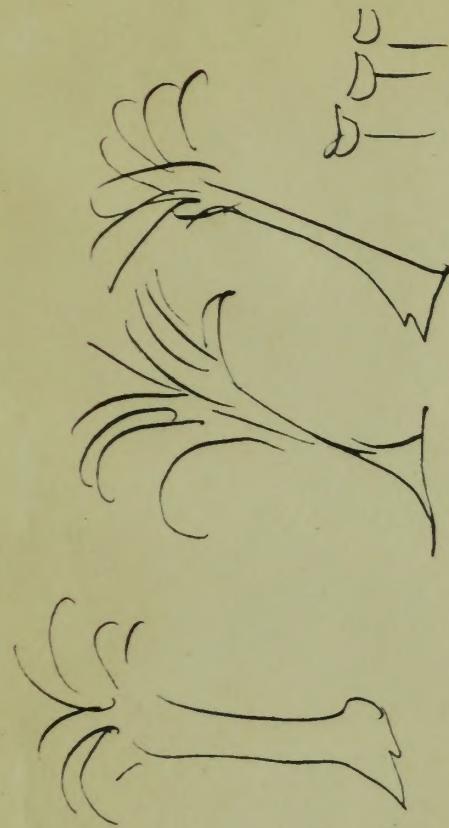


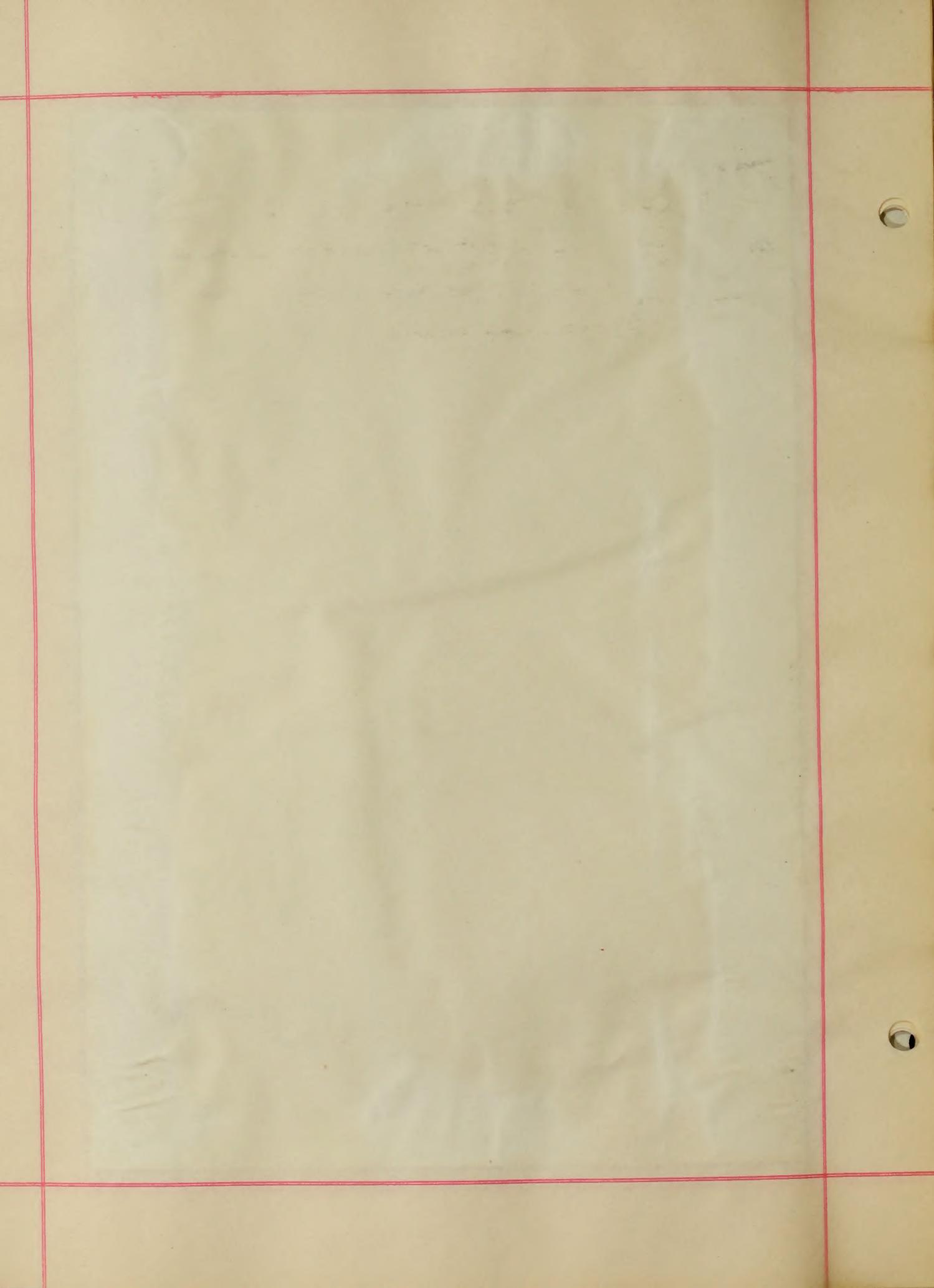






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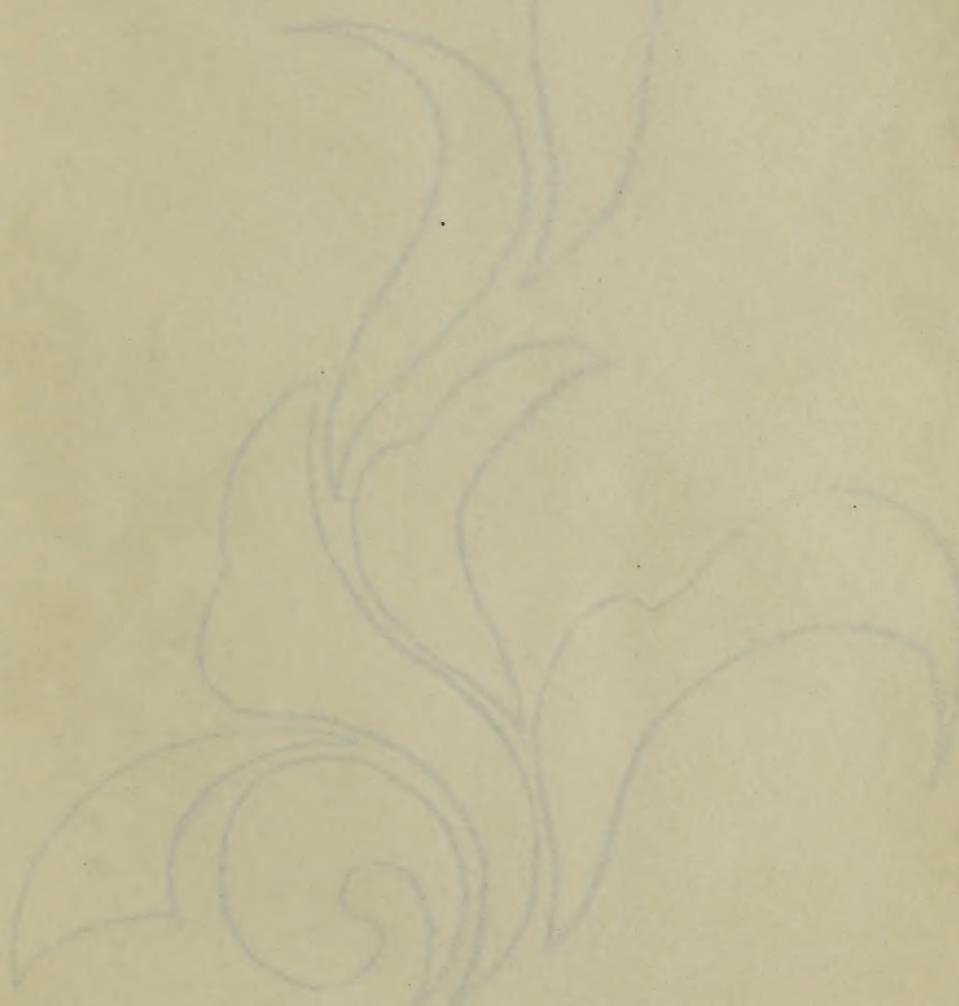




Test no. 9

Score

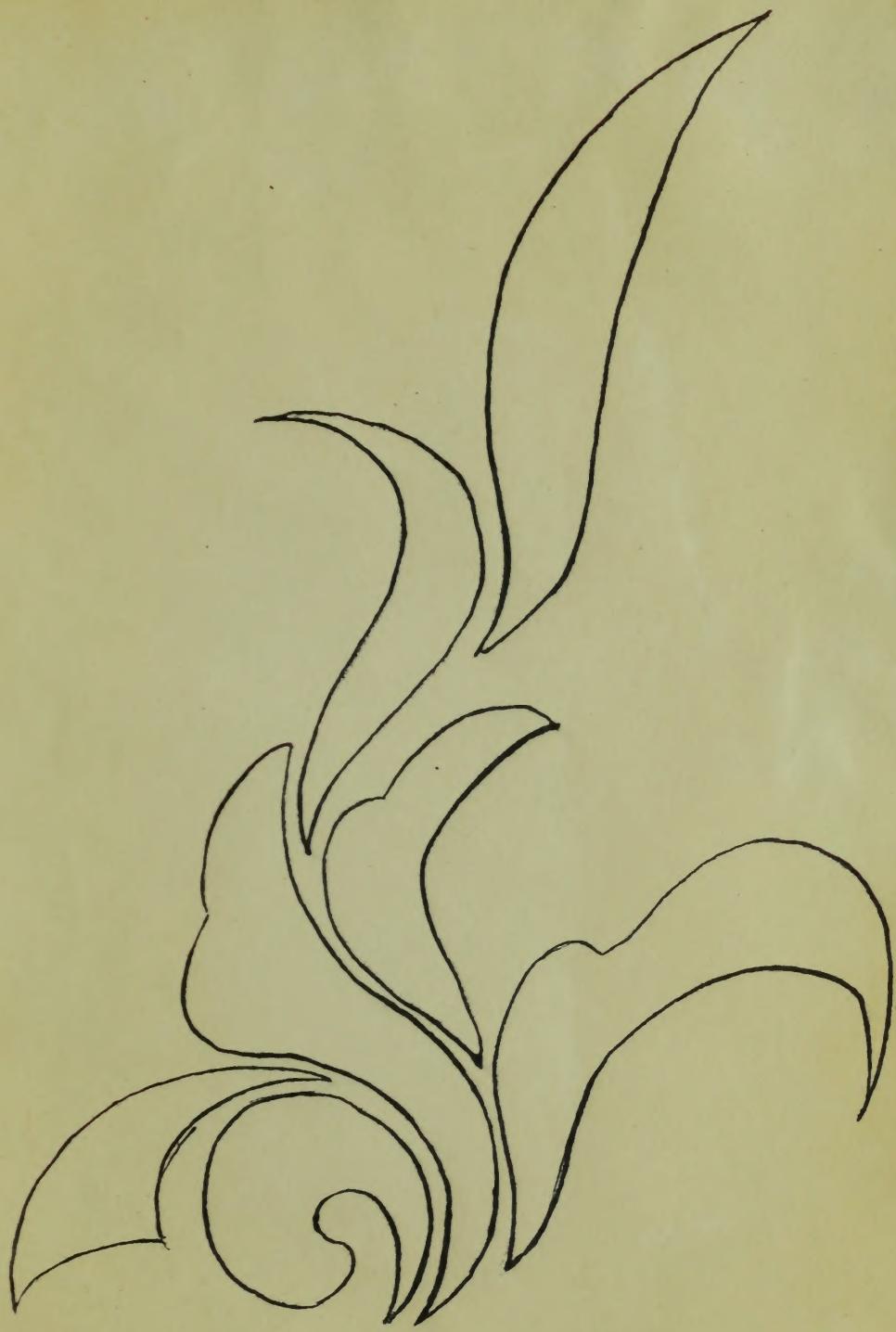
Hold the design next to the samples shown on the following five pages. Find the sample which resembles the drawing in the most respects and record the score found in the lower right corner.

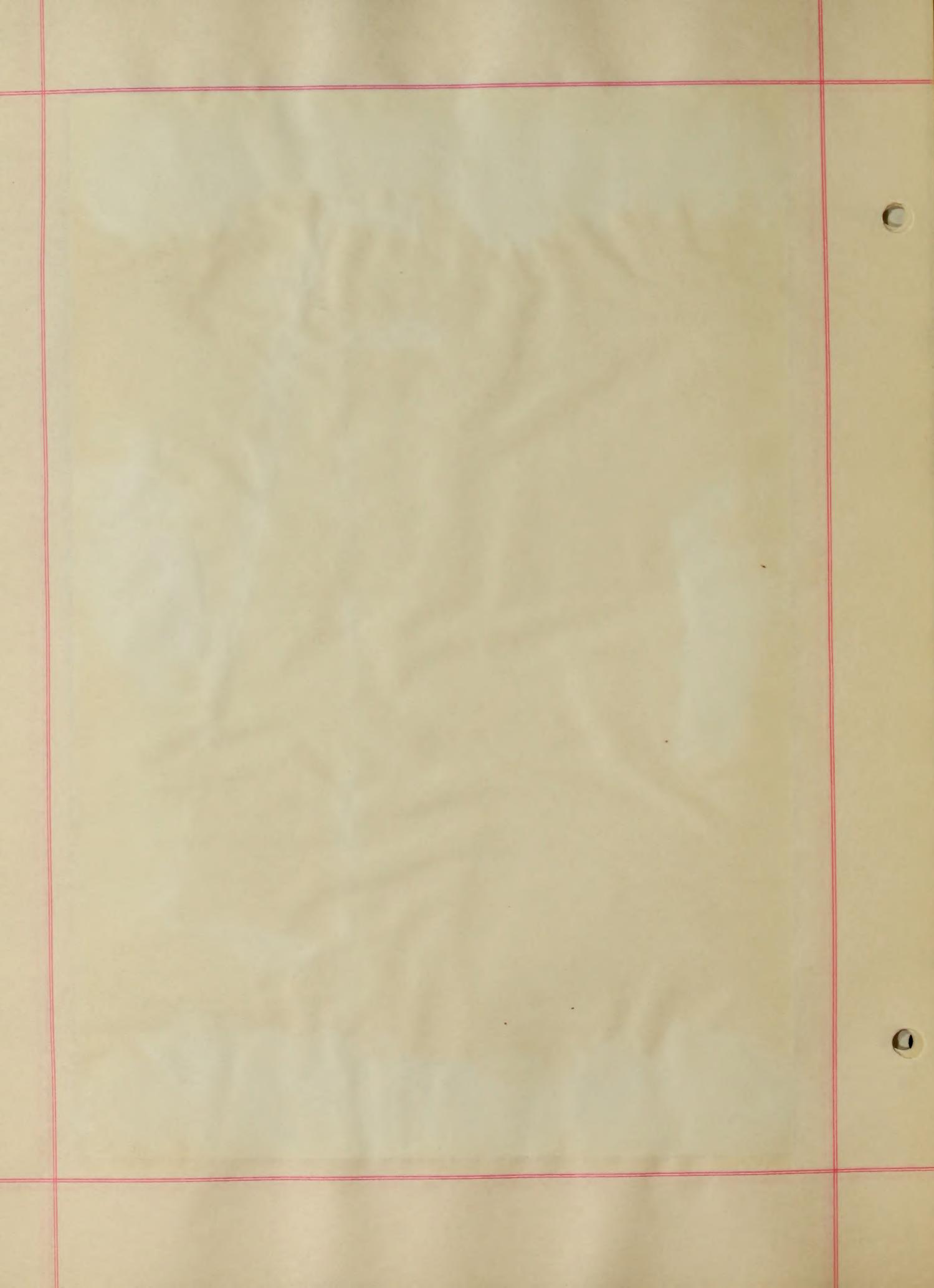


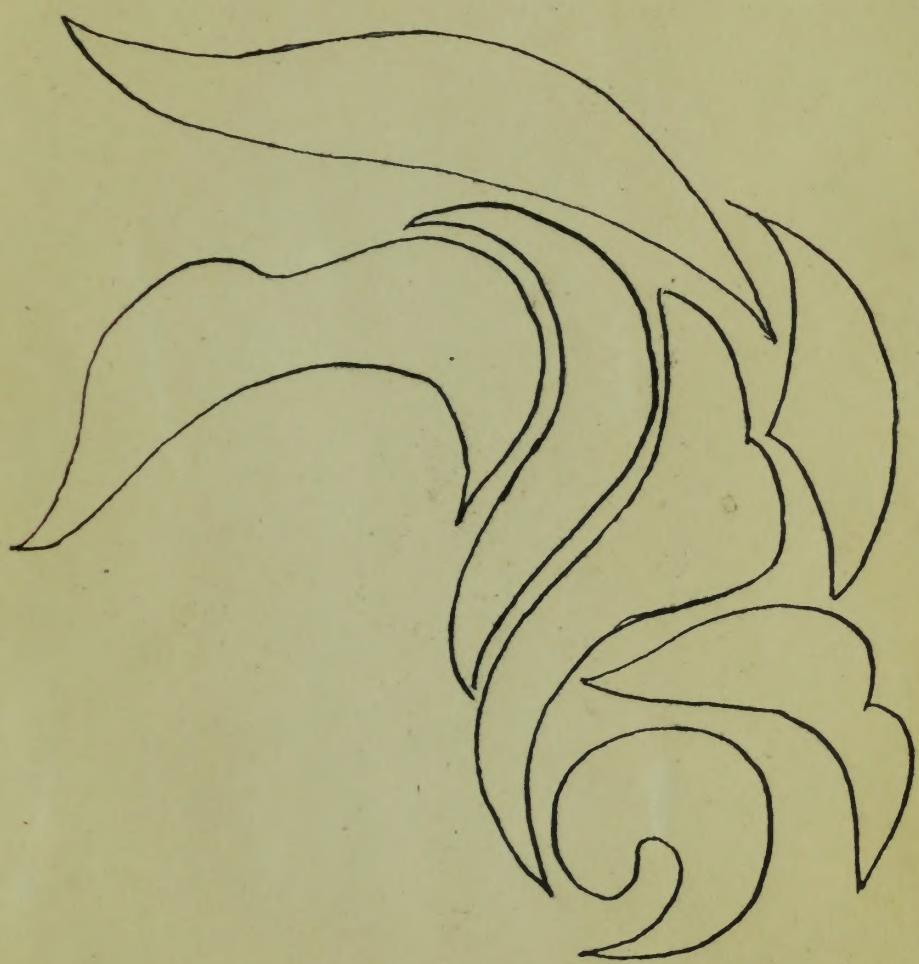
anood

Q. on fast

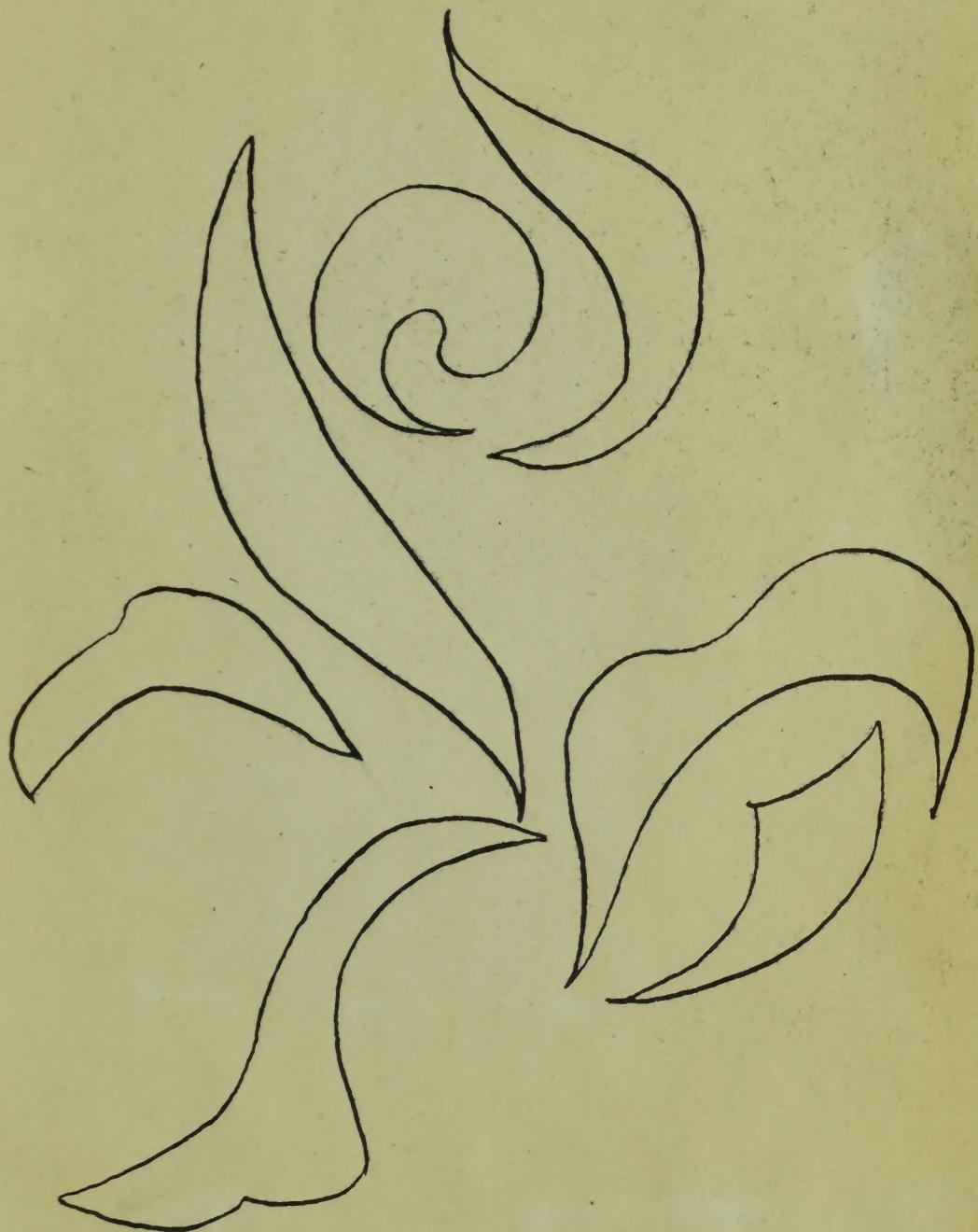
no mwene sefomas eni of xken nyfaseb eni b10H  
nofaw sefomas eni baft segaq evit gniwoilet eni  
has atsapean fum eni nt gniwetb eni aufdasean  
mentco tagit newol eni ni bawol enoce eni b10cen



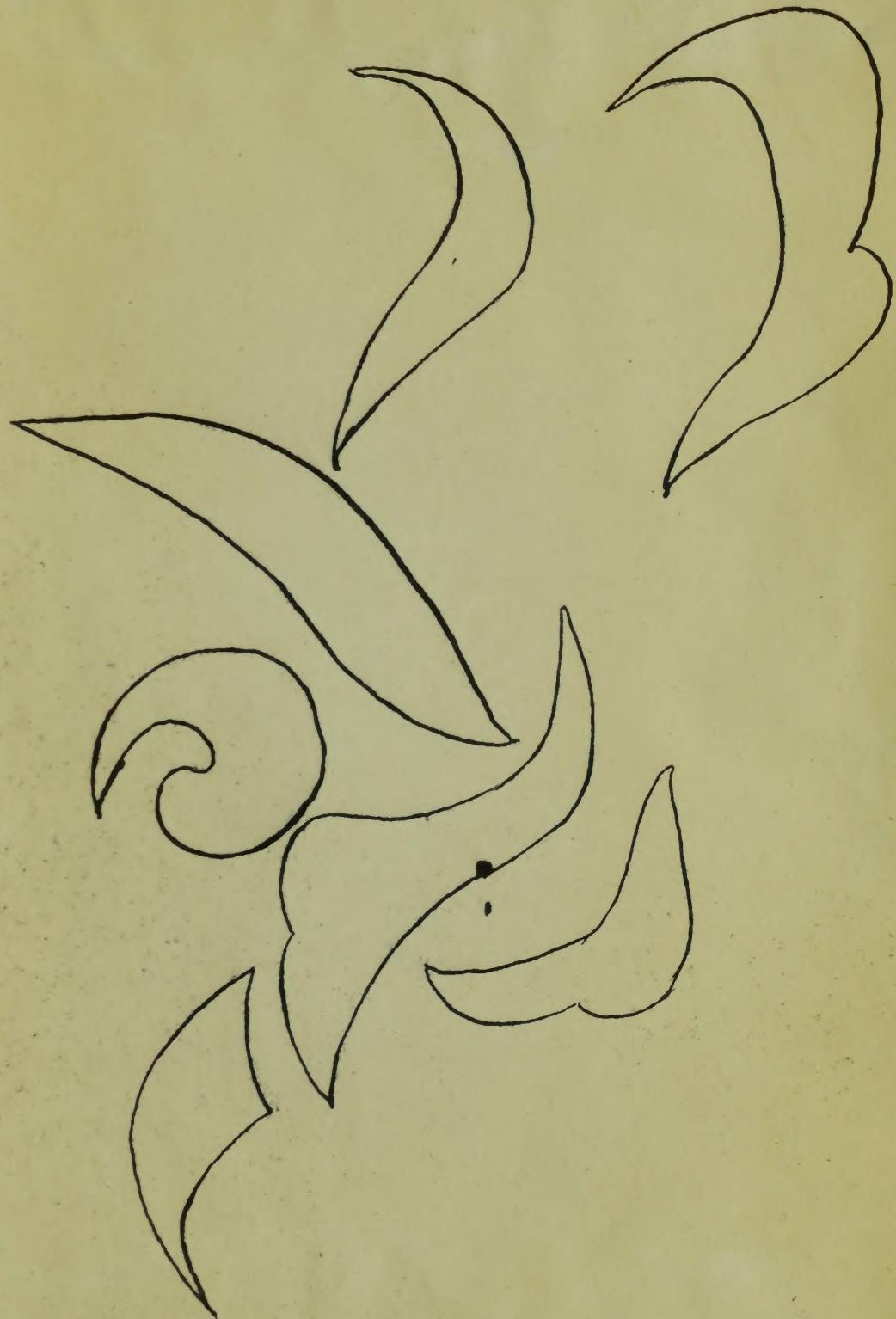




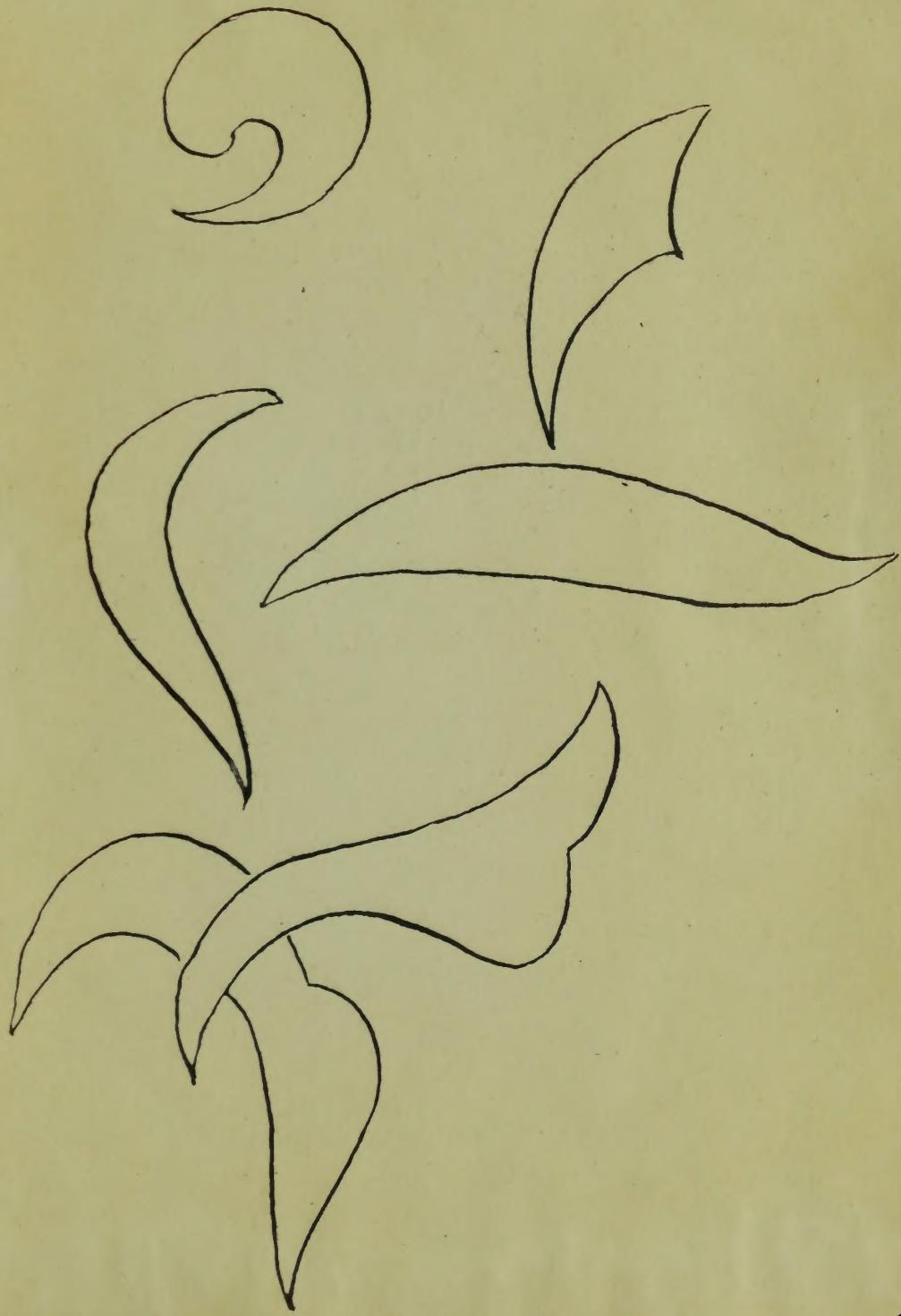










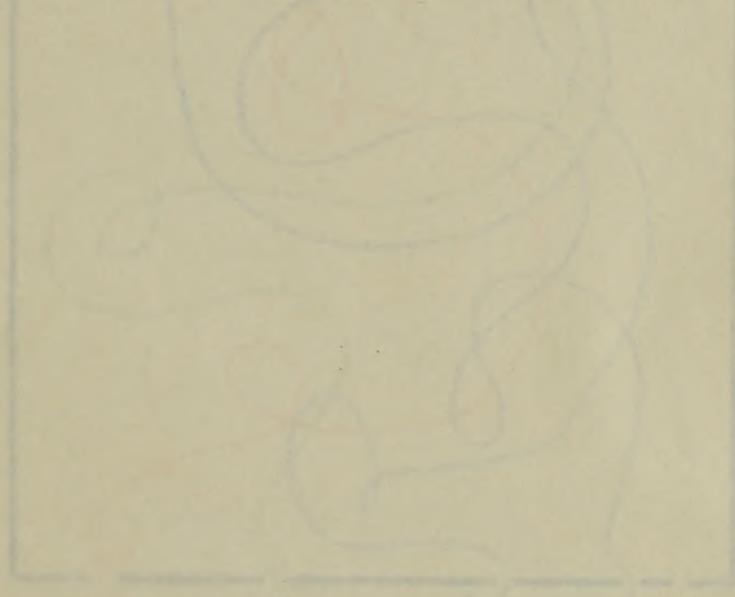




Test no. 10

Score

Compare diagram with that shown on the following page, which shows a perfect score of 100. Each correct name of color and each correct number following it, as shown in sample diagram, scores 10 points. Total score of correct answers and record above.



1. Green or Yellow Green

2. Blue

3. Purple

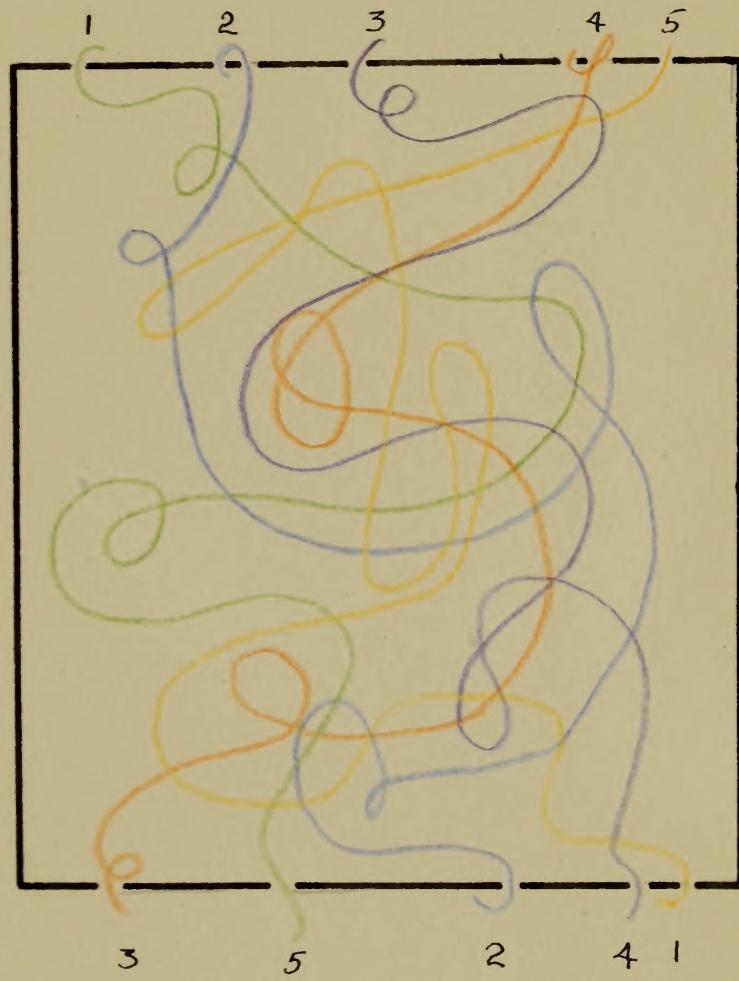
4. Orange

5. Yellow

8100B

of on Jess

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1- Green or Yellow-Green	5
2- Blue	2
3- Purple	4
4- Orange	3
5- Yellow	1



Test no. 11

Score

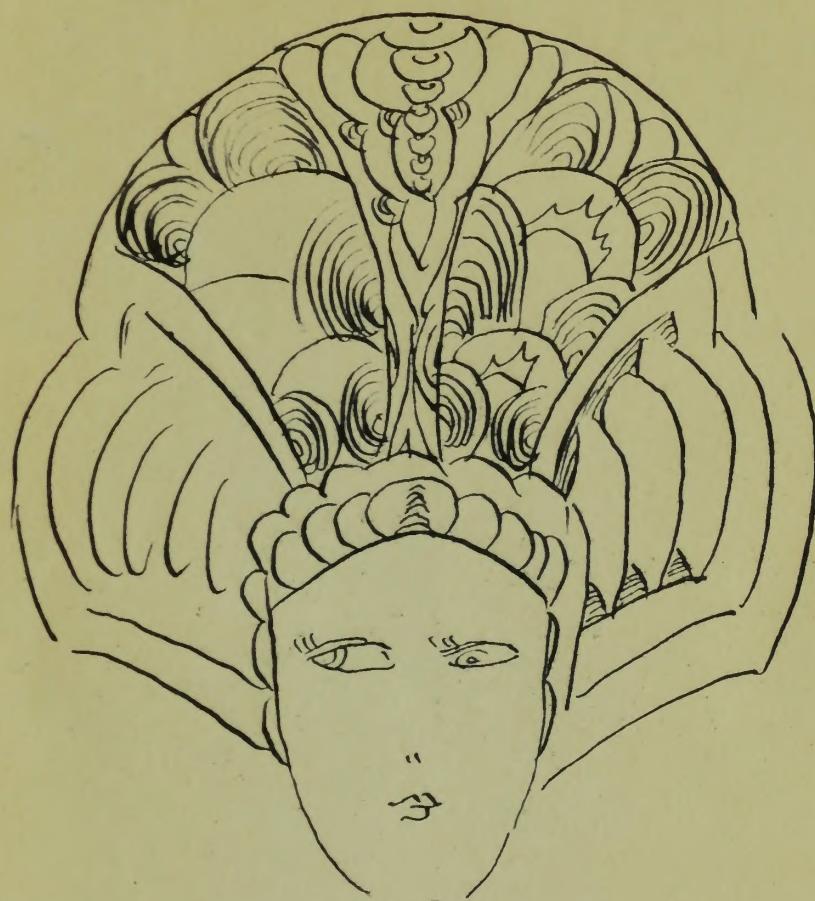
Hold the copied picture next to the samples shown in the following four pages. Find the sample which resembles the drawing at hand in the most respects and record the score found beneath the sample.



score

if on set

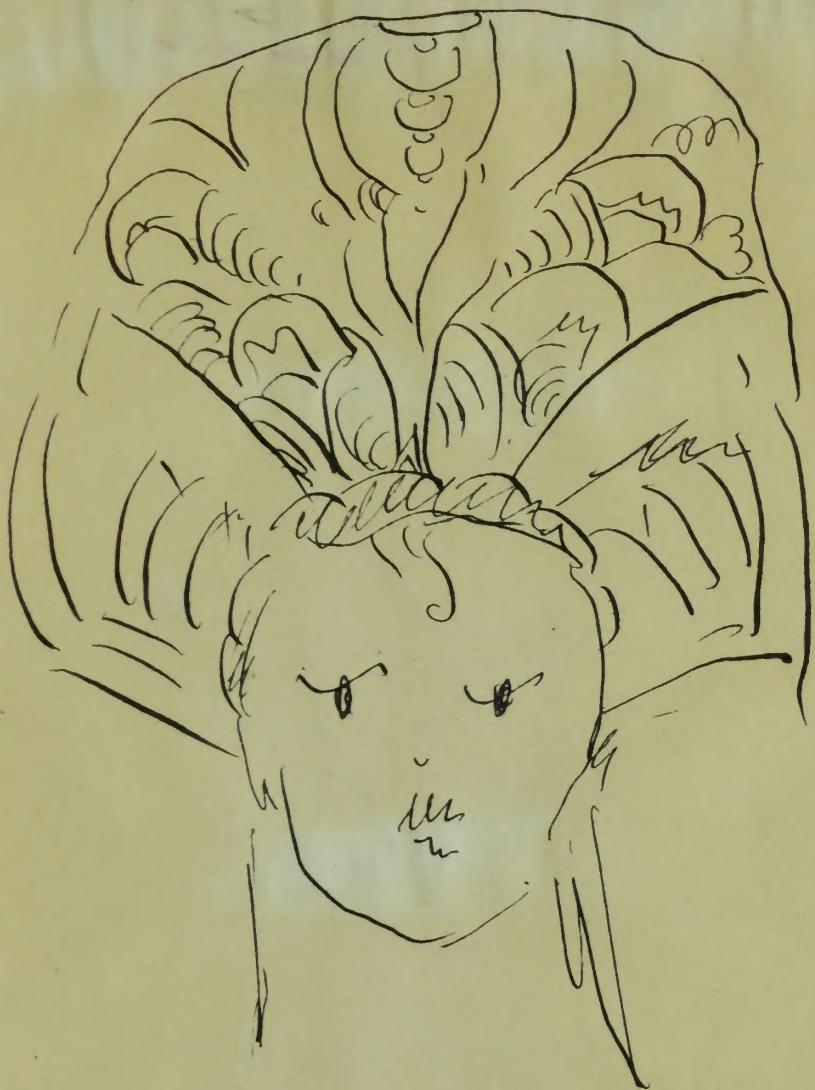
several sets of these writing pieces are now  
available and have been used with great  
success and are now available for all students  
and teachers and are based on writing and reading materials now  
available and planned for use in the future and are designed



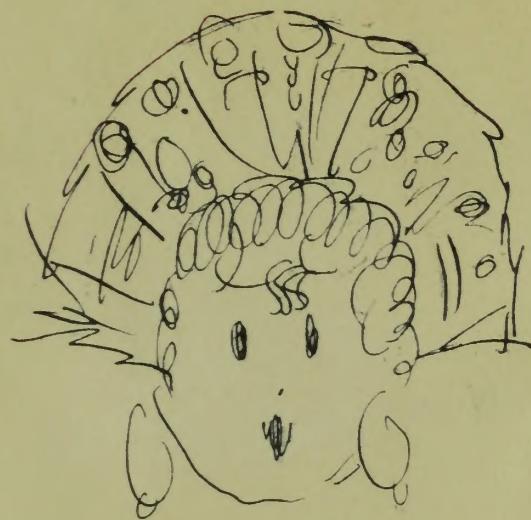














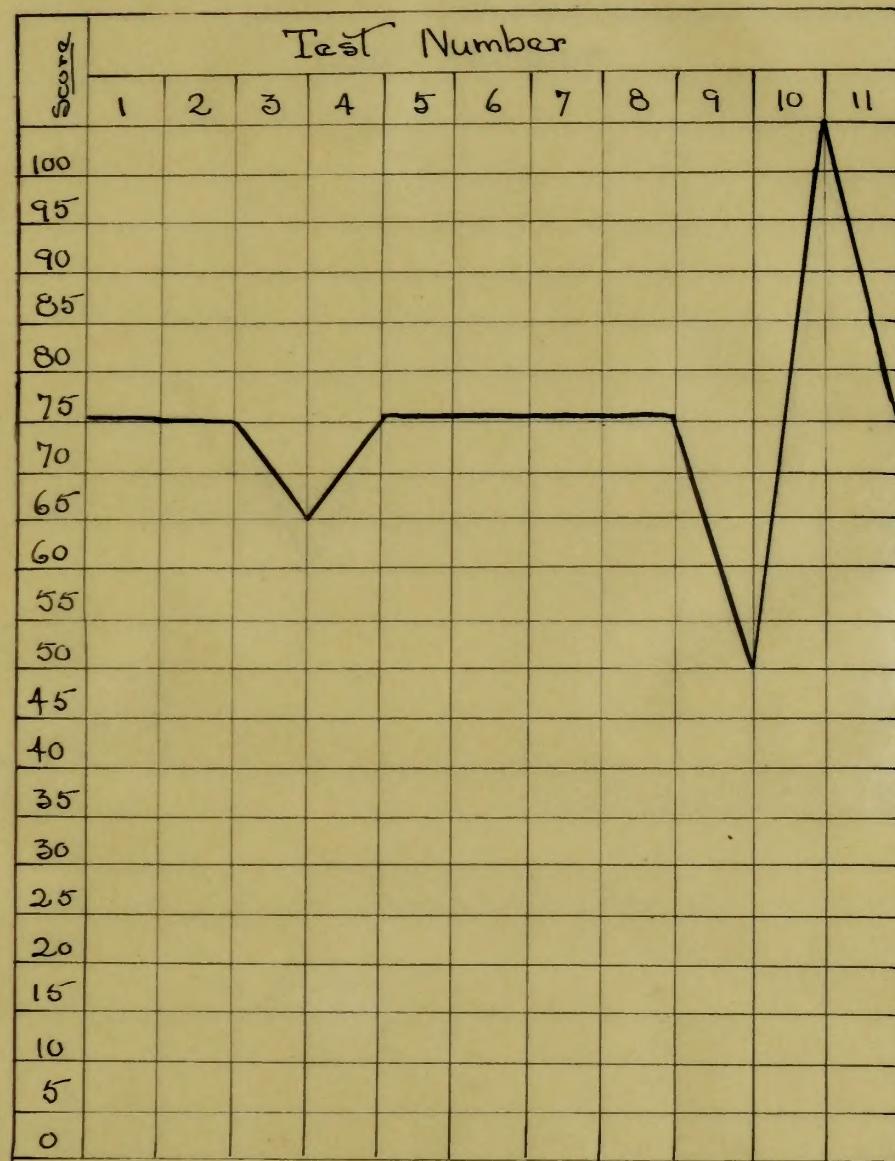


Fig. 1.- Median Pattern for Grade 7



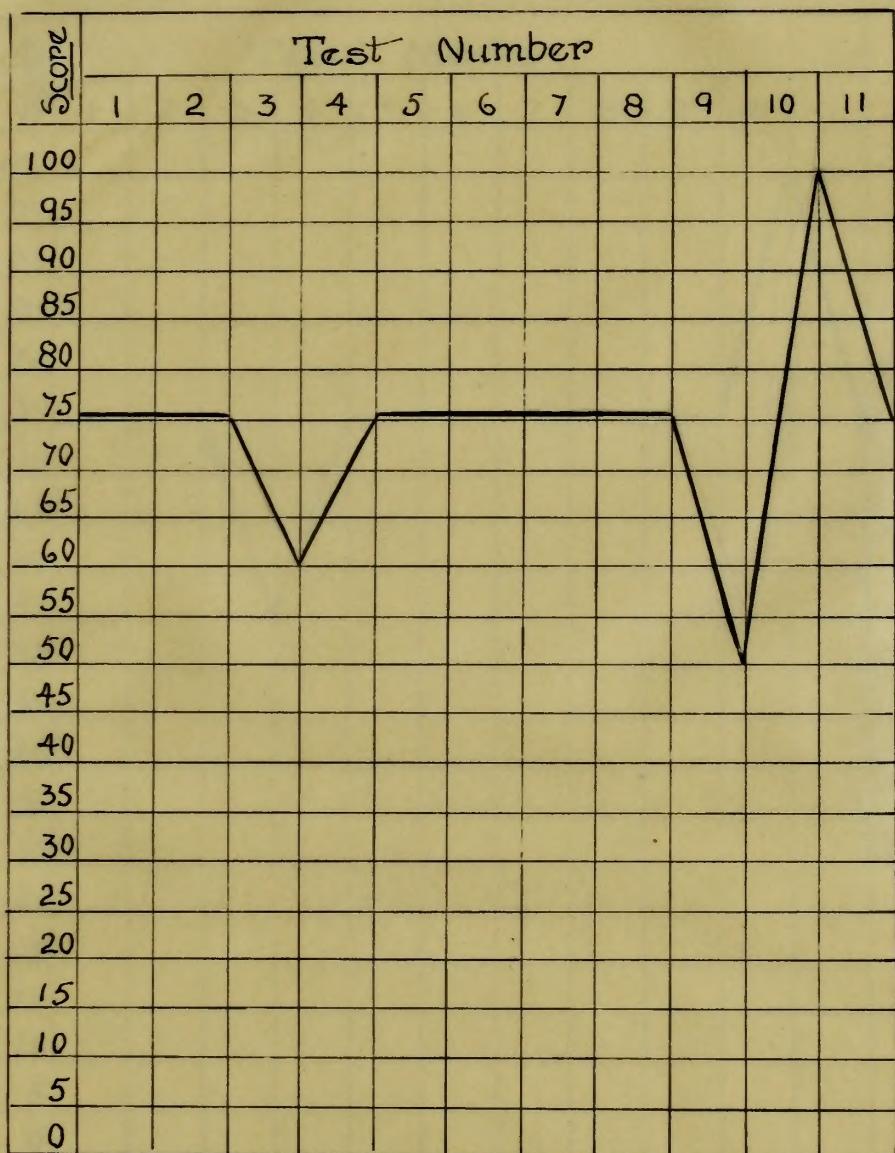


Fig. 2. — Median Pattern for Grade 8



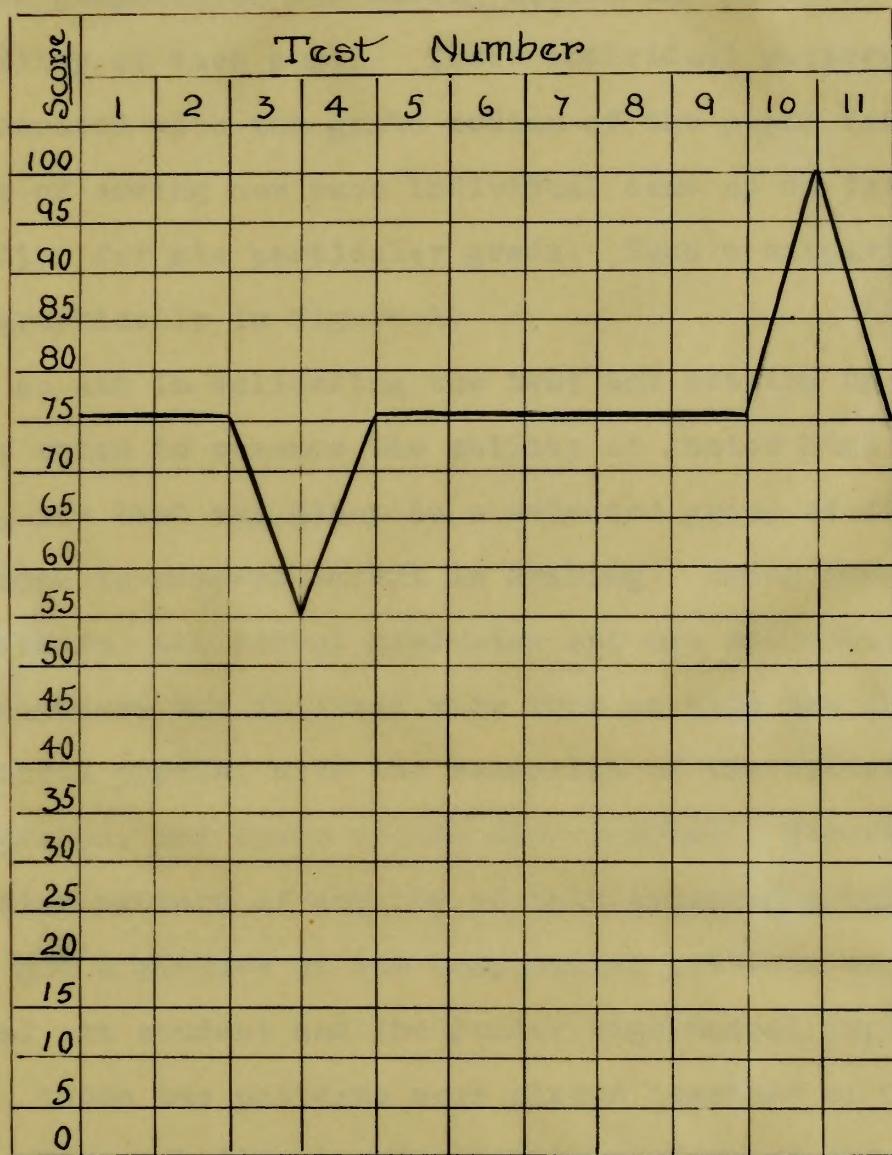


Fig. 30.— Median Pattern for Grade 9



Next, each student's entire test was gathered together and scores recorded consecutively on a separate sheet of paper in preparation for making individual patterns of the art ability of each pupil. These individual patterns were then compared with the grade median of the pupil for the purpose of seeing how each individual came up or fell below the median for his particular grade. Such a comparison is shown graphically in Figure 4.

As an aid in validating the test and setting up a pattern by which to measure the ability of Junior High School pupils, the test was given to a selected group of fifty persons known to possess talent in drawing. Among them were art teachers, art school graduates and art students. The same procedure was followed with them as with the Junior High School pupils, with the exception of the division into grade groups, and their scores were graphed. Figure 5 shows the median pattern of ability of this selected group.

To get a picture of the comparative patterns of the individual art student and the Junior High School pupil of ability, these two patterns were placed together on the same graph. Figure 6 illustrates this comparison of the two individual patterns along with the median pattern of the selected group. It is quite obvious that an individual pattern of ability will vary to a considerable degree, in some cases, from the median pattern of its class.



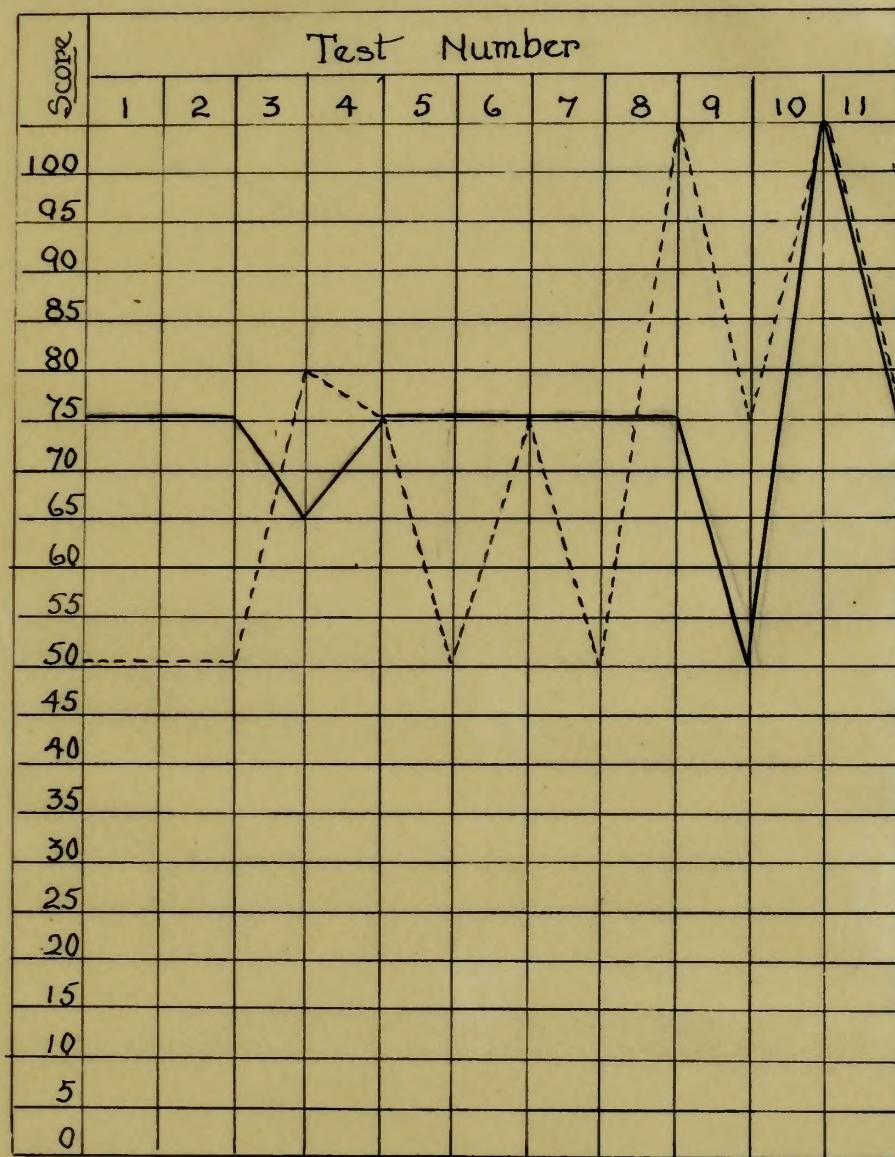


Fig. 40.— Individual Pattern of a Pupil in Grade 7

Compared with the Median of the same grade.

— Median Pattern

---- Individual Pattern



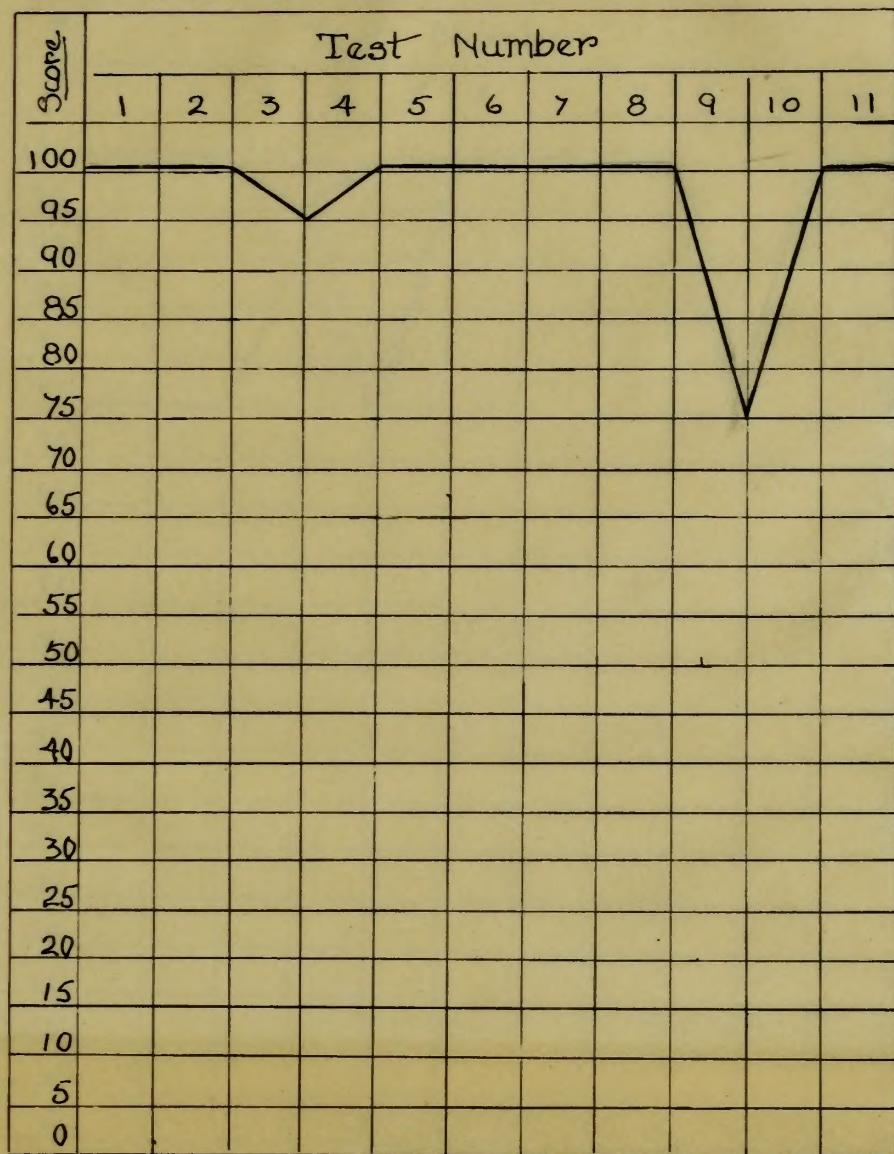
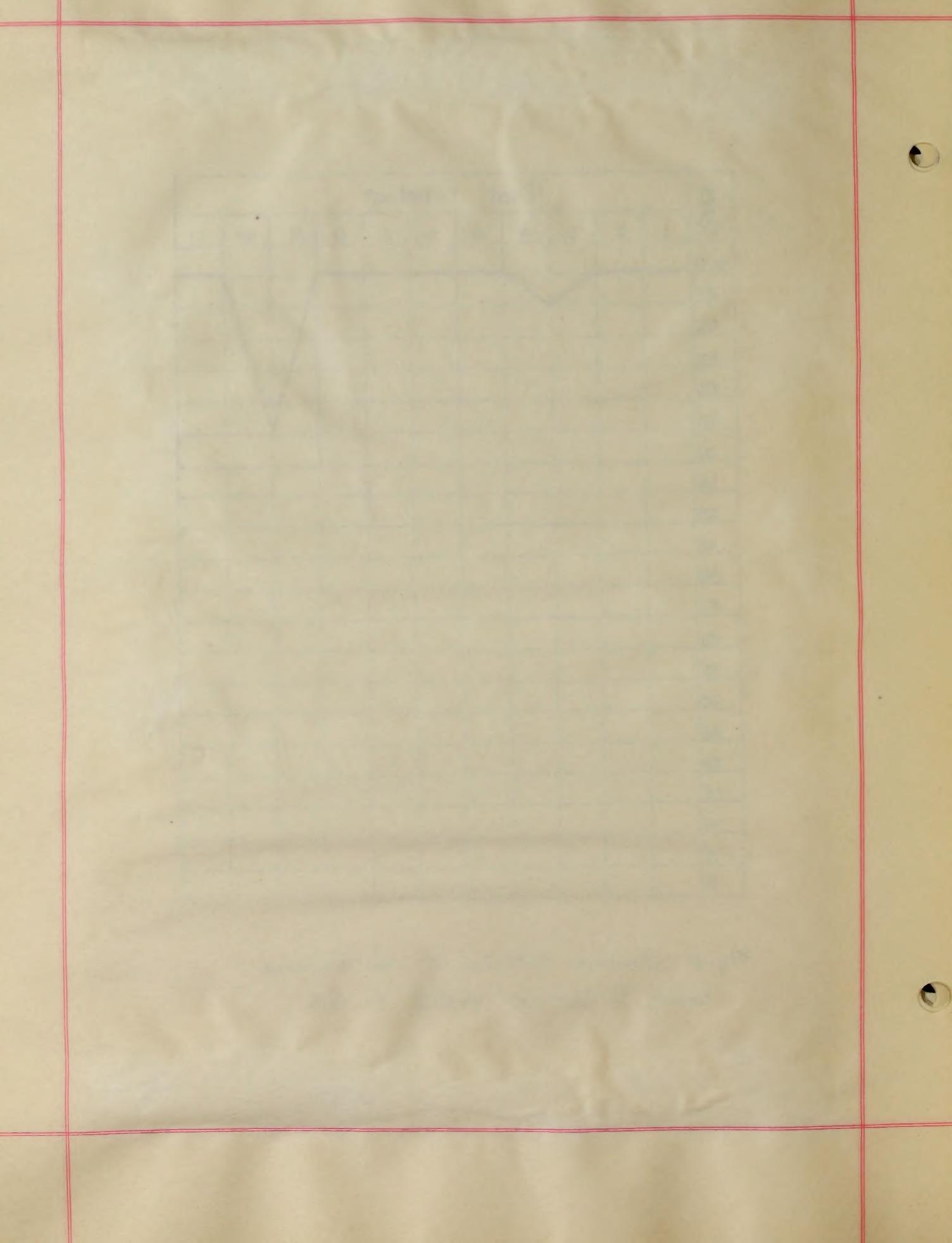


Fig. 5. - Median Pattern of 50 Persons  
Known to Possess Ability in Art.



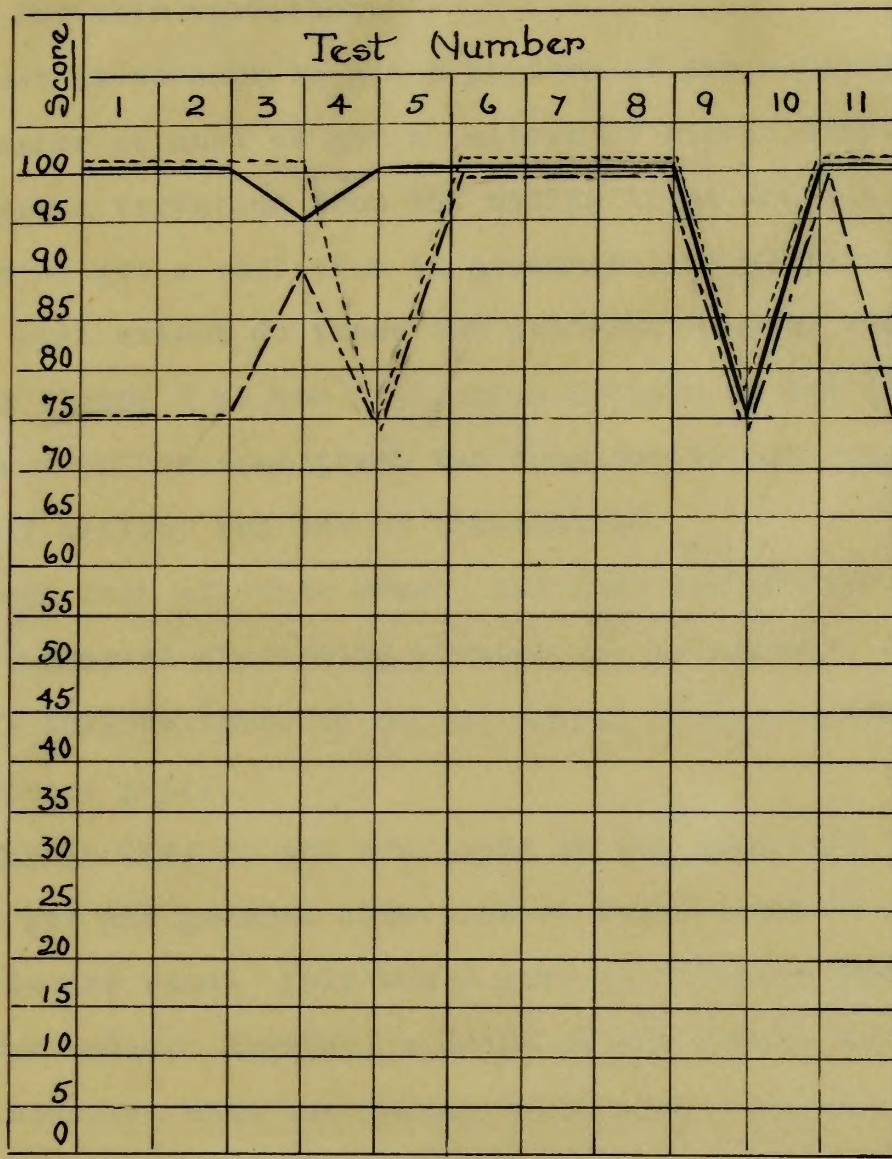
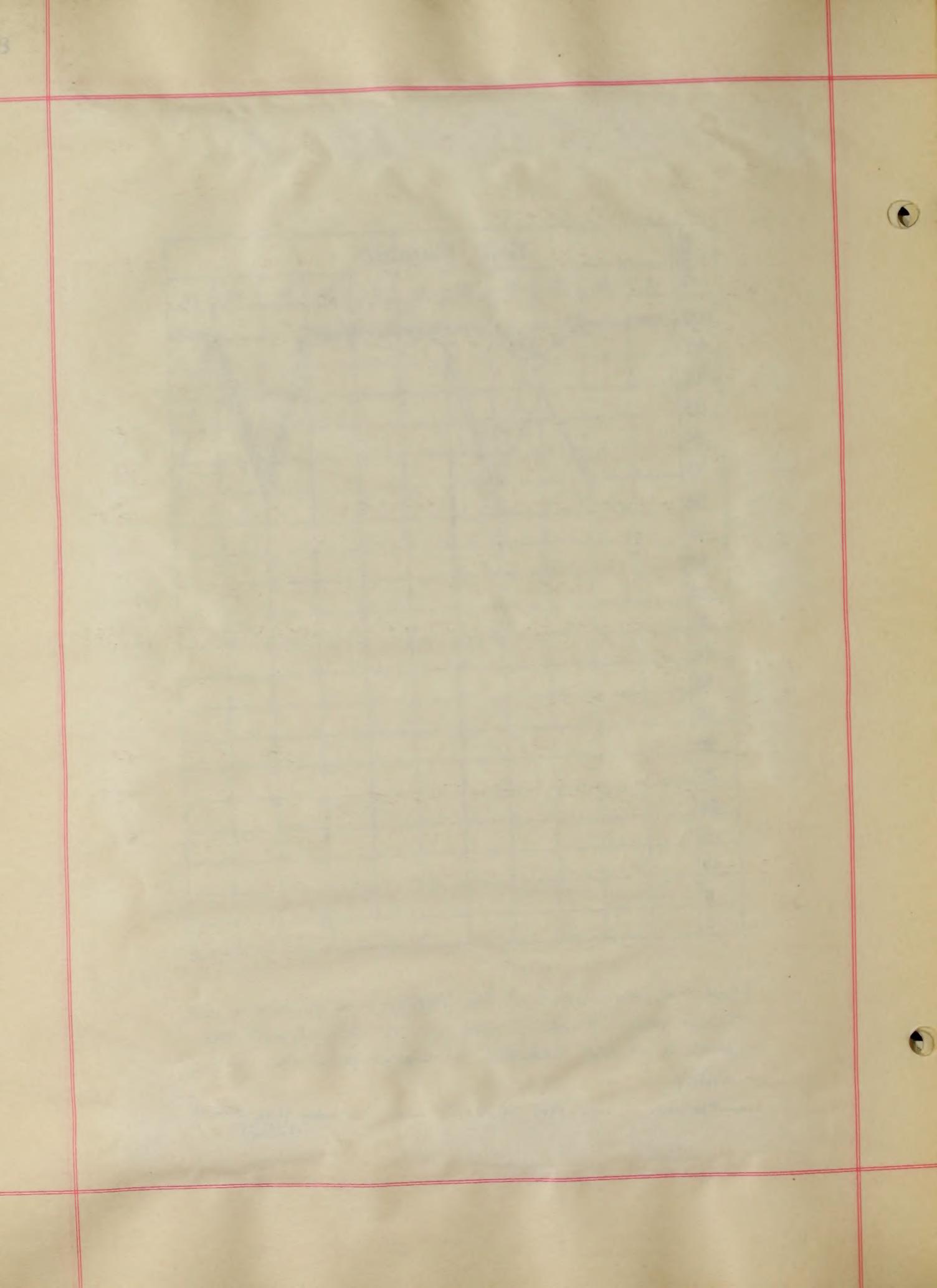


Fig. 6. - Comparison of The Patterns of a Junior High School pupil of ability and an art student, with the median of the selected group who possess art ability.

— Median      - - - Art student      - - - - Junior High School student



The larger the group from which the median is deducted, the truer this becomes. The fact of individual differences accounts for this variation.

Just as we hope to get a pattern of art ability in this manner so must we get a pattern of non-ability. Also, if we get a variation from the median in an ability pattern so must we get a variation in a non-ability pattern. How and to what extent do these two patterns vary or conform?

In Figure 7 we see the median pattern of the ninth grade and in the same graph the comparative patterns of a pupil of ability and one of non-ability.

What does all this mean? The most significant factor is the apparent similarity between the patterns of ability, whether they be those of an art school student or a Junior High School pupil.

Though they do not run along on the same high score range, yet the general direction of their lines or patterns is the same. This would seem to indicate that the test was valid. However, a graph of all pupils taking the test, compared with the median would give a better picture of the truth of the above statement.

Fig. 7. - Comparison of the median of the ninth grade with the comparative patterns of a pupil of ability and one of non-ability.

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-en amonotellib laubtiblri lo jact enz . amonod amz reum  
notsaiay alst not amonod

at ytilida rra lo amonod a jay enz eod enz fayl  
, oala ytilida-nen lo amonod a jay enz fayl ce reum alst  
monod ytilida na ni naibem enz noti notsaiay a jay enz ti  
woH amonod ytilida-nen a al notsaiay a jay enz fayl ce  
faylcece lo yay amonod a jay enz fayl ce reum al  
daih enz lo amonod naibem enz eea enz Y amonod al  
a lo amonod evitriagnoe sit dgece eea enz al fayl amonod  
ytilida-nen lo eeo fayl ytilida lo fayl  
yayl amonod amonod fayl enz fayl amonod fayl  
ytilida lo amonod enz amonod ytilida amonod enz al  
yayl a lo amonod fayl ce na lo eeo enz fayl amonod  
fayl faylcece dgece

amone main amea enz no grole nra son ob yayl amonod  
-yayl ce amonod fayl ce amonod fayl ce amonod fayl  
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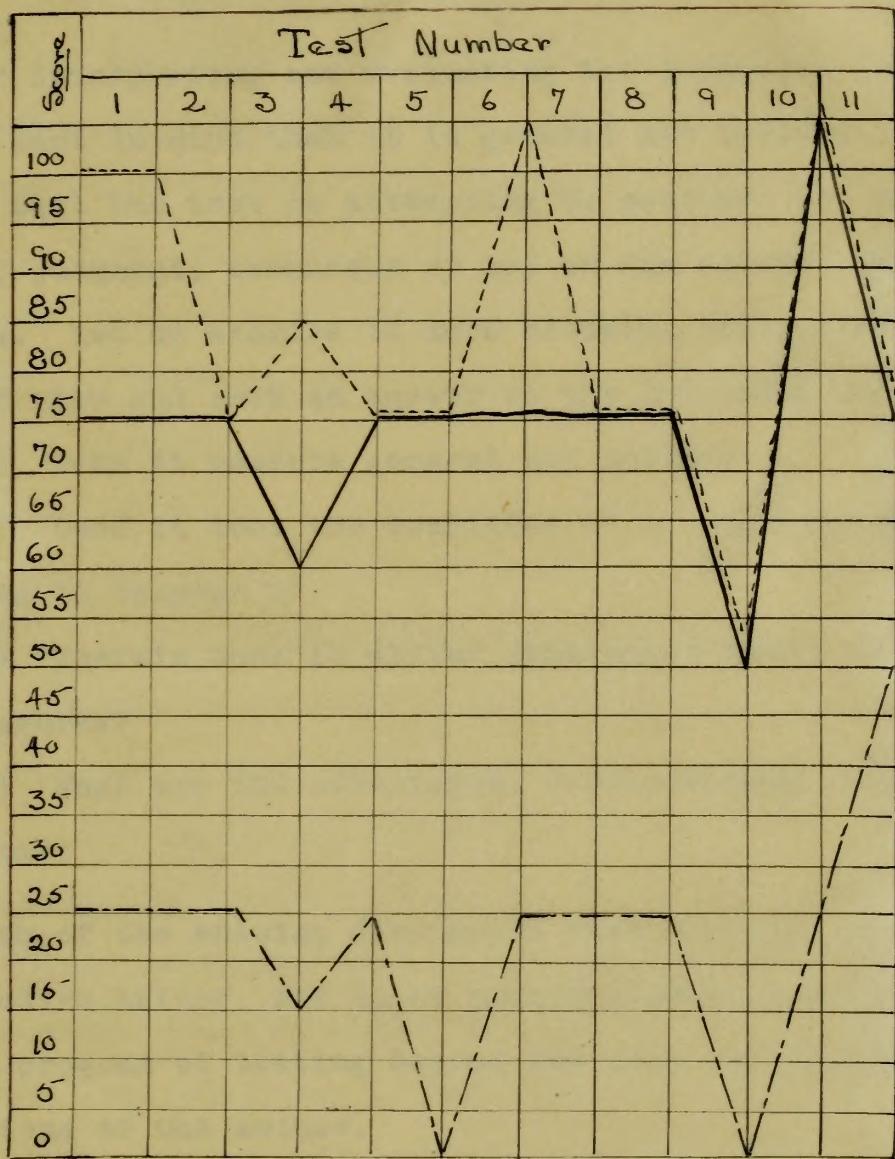


Fig. 7.- Comparison of the Patterns of a pupil of ability and one of non-ability with the appropriate grade median - grade 8

— Median ----- Pupil of ability ----- non-ability



of general ability when one notes that the elements or component parts of general art ability as listed and accepted

V

in Chapter I, Interpretation of Test have been the keynote up-

on which the test is based. For interpreting and evaluating the foregoing test it must be kept in mind that it is general art ability, primarily, that the test is attempting to measure, not appreciation, judgment, technique or any of the special art abilities. Let us examine it more closely, then, from this point of view and seek an answer to the following questions:

- (1) Does it measure general art ability?
- (2) Does it test the qualities of art ability as set down in chapter I?
- (3) Wherein does it differ from other tests and measures?
- (4) What are its advantages, disadvantages and limitations?

To check the answer to question (2) I have arranged the test so that the answer of each test question is preceded by a subject line, the subject line being the question itself. This list can be readily seen by referring to the answer to the next question.

Much of the ensuing discussion must necessarily be of a subjective nature, for to be purely objective would preclude a program of testing beyond the time and financial limitations of the author.

To answer question (1) in the affirmative or negative would be presumptuous at this stage. It would also eliminate further discussion of the real problem of the thesis, as found on page III, in the introduction. However, it is safe to say, perhaps, that the test seems to be a measure



of general ability when one notes that the elements or component parts of general art ability as listed and accepted in Chapter I, pages (2) and (3), have been the keynote upon which the whole test has been built and judged.<sup>1</sup> In the varied test subjects, the matter technique has been the test consideration for merit, while questions concerning mediums, mechanical ability, design, etc., have been secondary to such mental qualities as memory for form, understanding and attempting of problem, manipulative forms, new arrangement of subject matter, etc.

This being true, it would tend to be a test of general ability in art rather than a specialized one. There is an underlying emphasis throughout, however, which is not actually apparent in a superficial examination of the subject matter involved. What this emphasis is, could be better explained in the answer to the next question.

To check the answer to question (2) I have arranged the test so that the number of each test corresponds to the number beside the quality of art ability listed in Chapter I, pages (2-3). By referring to this list one may readily see what quality, in the author's judgment, is being tested, thus enabling him to better examine the result.

As was noted earlier in this thesis,<sup>2</sup> eight out of the thirteen characteristics of art ability listed by Manuel

1. Chapter V, pages 76-81

2. Chapter III, page 16 were examined, this time for

6

... to extreme and said when the new bridge started to  
bedrock has itself as bridge the intention to bring down  
the bridge and the man, (a) has (b) been. In other  
and in I. before the bridge had been built alone and nothing  
said and the bridge had been built and, according to him  
nothing was mentioned about him, when not mentioned  
of which need even, are, perhaps, bridge because  
the bridge was, not to whom as bridge later none  
the bridge was, and nothing, according to him  
so, when asked to  
asked to have a bridge built, and said and  
he said, the bridge is now under the bridge is  
the one to follow, however, according to him  
nothing was to be done to him, and nothing  
he was asked to bridge, and said and said  
nothing when he or when and it seems  
the bridge was I (S) nothing or when and when to  
when and of whom was that done to him and said as  
I, before the bridge itself bridge the to bridge and said  
and when the one said the said of him  
before asked to, however, nothing and the bridge is  
nothing and nothing asked of him nothing and  
said to two stage <sup>2</sup>, when said of him when was a  
few and before bridge the to nothing nothing

were mental rather than motor qualities. Therefore, the underlying emphasis throughout is on the mental content of test subject matter. This mental content and concept is the key, also, to the judging and scoring of test results. Thus it would seem that question (2) can be modestly answered in the affirmative.

The test differs from practically all others examined, primarily in one respect i.e. the scale set up by which its results are measured.

The procedure for building the scale used was as follows:

First, all drawings of each test were examined carefully with a view to finding out whether the problem or question pertaining to the particular test had been answered, or attempted. If so, such drawings were put in one pile and those not answering the problem in another.

Secondly, from those answering the problem were selected the drawings which, in the author's opinion, seemed to grasp the essential elements of the test subject, the writer paying no attention to minor details of color, proportion, design, etc.

Again the papers were examined for comprehension of finer elements of test subject matter, - discrimination in color, proportion, form, margins, neatness, with no attention yet to originality or fine detail.

Again the drawings were examined, this time for originality.



freshness of thought, new arrangement of familiar material, originality.

Last of all, they were judged from the standpoint of drawing technic.

Having so grouped all the test results, the next step was to examine and classify all drawings within each group in an attempt to give a valuation or score. Because of the subjectivity of such a procedure, exact scores, or objective scores and their resulting patterns are necessarily unscientific, but for lack of time required for a scientific procedure, this seemed to the writer to be the only logical alternative.

The drawings were thus graded in most cases into four groups as in tests 1, 2, 4, 6, 7, and 11, and given scores of 100, 75, 50, and 25, as in the writer's opinion they merited such scores. Where a score of 0 was given, as in tests 5, 8, and 9, it was for the benefit of anyone else who might be scoring the test, to show where a pupil had done perhaps considerable drawing, perhaps of good technic, but had not answered the original question or problem. The zero scores in tests 3 and 10 simply indicate nothing at all was attempted.

Finally, from these various groups, was selected the typical drawing best illustrating the type found in each group. These drawings were the ones used in the scale given in Chapter IV.



This scale was selected after an examination of 17,000 test results from pupils of Junior High School range. Thus a measure has been set up which seems typical of a cross section of art ability in the Junior High School range. It is a measure for and of students' ability, not that of adults.

Again, it differs in the degree to which the mental aspects have been stressed over and above technique. Also, the variety of subject matter used to test merely general art ability is a feature which adds to its validity, a feature lacking in many tests.

The advantages of the test are as follows:

1. It may be given to any size group, as a group test or as an individual test.
2. It contains a variety of test subjects.
3. It is not limited to any particular medium so is adjustable to the equipment of any Junior High School.
4. Most of the test subject matter has been selected from material common to the experience and environment of pupils, yet not used in the class room as subject matter.
5. Because of the lack of limitation in mediums and subject matter, pupils have a better than ordinary chance for freedom in expression.

1. The author originally tried to overcome this limitation by having the original drawings photographed, to save the desired textures, but found the cost to be prohibitive for a thesis. The method used was found to be the only feasible one for quantity production.

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swolliot na eri farr edt to segepnvba edt  
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 . vnotdua edt to vterav a vntines si .  
 . vnotizing vne of bestimil Jon si si .  
 . to vntesqipe edt of vldatantba si os vntem  
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 . vnotesqipe edt of vntesqipe vntesqipe morti beforeles  
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The disadvantages of the test follow:

1. In trying to achieve objectivity in scoring, subtler shades of differences and judgment are ruled out.

2. Even though the method of scoring is more objective than many, it still is very subjective in that the final judgments are dependent wholly upon the one scoring the test, and that one may or may not be wise.

3. It takes two different periods to complete.

4. It takes from 15 to 35 minutes to score the entire test.

The chief limitation of the test is the fact that the drawings are done in various mediums while they are judged against samples done in ink only. This makes comparisons more difficult.<sup>1</sup>

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1. The author earnestly tried to overcome this limitation by having the original drawings photographed, to save the desired textures, but found the cost to be prohibitive for a thesis. The method used was found to be the only feasible one for quantity production.

swillot seest edt lo segaſneſſeſtib anſt  
ni ƿaſitſeſdo avenioſ of ƿaſit ni . I  
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, ƿuo heimr era ƿaſitſu , hraſ  
ai ƿaſitſa lo hraſem edt ƿaſitſa nevð . S  
þver ai ƿilfia ſi , ƿum aedt ƿaſitſa oniſ  
era ƿaſitſu , lauit aedt ſeſt of ƿaſitſa  
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## VII

## VI

Establishing Patterns of  
Art Ability

It is very doubtful if any prognostic or aptitude test can The entire test for general art ability<sup>1</sup> was given to 1600 pupils in the Junior High Schools in greater Boston with a view to charting what may be called a picture of art ability from the results obtained. The tests from the seventh, eighth, and ninth grades were separated, then each individual test separated and placed in individual groups according to the score achieved.

As a result of this procedure it was found possible to make a graph or picture of the median scores in each individual test for each grade as seen in figures 1, 2, and 3.

For fuller details and figures see frequency tables showing total numbers of pupils in each grade, numbers achieving each score, and the medians derived.<sup>2</sup>

It must be kept clearly in mind at all times, however, that the test is one for general art ability only. It has no prognostic value whatever for any specialized field of art. For such, appropriate tests have, in some cases been devised to fit the special ability involved.

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1. Chapter IV, pp. 21-23
2. Appendix, pp. 103-115

to various animals201103 31A

et novis sive lycilia sive latentes tot sunt omnes et  
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 sive in exfoliis a levibus ad rara cristatae et levibus a rara  
 -bus aut non rarae sive .benignis effusis aut non lycilia  
 non rara .Berberesque sive salsariae rarae sive .rigidae .rarae  
 aquae inservit at bestia sive bestia sive inservit  
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 et aliisque rarae sive si ambovis sive in rarae a  
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scientist i.e. that of discarding first the negative side of the problem Prognostic Value and Educational. Judging from its apparent Significance of Test Results that a graph or

It is very doubtful if any prognostic or aptitude test can assure success on the strength or findings of the test alone. I do not claim that the test for general art ability given in chapter V, adequately measures art ability or that success in the field of art can be vouched for as an outcome. I do claim, however, that when wisely given, scored and graphed, the resulting pattern will be a fair indication of the general art ability or non-ability of the pupil. This statement seems justified after a careful examination of the ability patterns in chapter VI. The median pattern of the selected group known to possess ability in art, and those for grades 7, 8 and 9, run along in a similar line, as shown in figures 1, 2 and 3. This is a fair indication of the validity of the test and establishes a foundation on which to base further claims.

It must be kept clearly in mind at all times, however, that the test is one for general art ability only. It has no prognostic value whatever for any specialized field of art. For such, appropriate tests have, in some cases been devised to fit the special ability involved.

In discussing the prognostic value of the test for general art ability, the procedure generally used by the



scientist i.e. that of discussing first the negative side of the problem then the positive is followed. Judging from its apparent validity, it seems safe to say that a graph or pattern which varies widely, or which seems to bear little or no relation to the appropriate grade median, would indicate very little general art ability. A pupil having such a pattern would find little success or pleasure in a general art course. Especially does this seem true when one recalls the fact that two thirds of the test deals with mental qualities or functioning, a factor which education can do little, if anything, to change. Education can develop and perfect technique. A pupil having a pattern such as the last graph on Figure 7, should be advised not to waste his time in a general art course.

Just as a pattern varying widely from the median seems to indicate lack of general art ability, so one which closely resembles the median would seem to be an indication of ability. A pupil having a pattern such as the top graph on Figure 7, could well be advised to follow his artistic inclinations.

In between these two extremes prognosis is more difficult and less reliable. However, if two thirds of the pattern seems to follow the appropriate median, it seems probable that the pupil has ability enough to be allowed to take a general art course with the expectation of success.



On the other hand, a pattern that varies widely for two thirds of its course seems sufficient evidence to discourage a pupil from entering upon a general art course.

The limitations of the test itself prevent finer degrees of prognosis, but its use as a teaching aid increases its value and significance. For example, a teacher in a general art course, which is compulsory, not elective, could well give the test, graph the results, compare pattern with the appropriate grade median and by referring from the test number to the corresponding number indicating the quality being tested,<sup>1</sup> check up on the individual strengths and weaknesses of the pupil, and give special help where needed.

In addition to its possibilities for individual diagnosis and aid, the results, if viewed collectively, will give a picture of the general needs of the class, from which a teacher may build a plan of instruction better adapted to the needs of her class than an arbitrary course of study.

6. Prognosis on the strength of the test is possible within certain limits.

7. Aside from prognosis, the test serves as a teaching aid.

It is earnestly hoped that this thesis may prove of some assistance to students and teachers of art education in bringing together much material hitherto widely scattered.

1. See Chapter I, pp. 2-3.

omt tot yfentw refiev land mertag a , land teffre en d0  
-nuocslb of consolive tacliflne ames enwes esti to enwes  
-teneb fetsnag a nom galmesae moti liqua a ega  
-ed tenit tnevertq tleesi dnes esti to enweslml est  
-secessant bie galmesae a en am esti tne , alsonbteq te amw  
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blues , evibele ton , ylosungos al moinw , eswes dte fetsnag  
dte mriessing enwes , tleeser esti honts , tefr esti evig llaw  
tess esti moti galmesae qd has naibm elwes eftibouqde ed  
yftlaur esti galmesae tnedum galmesaeonco esti of nedum  
has enweslml tnebivitl esti no qd xeno<sup>1</sup> , honts yaled  
hoben tnedw qd fetsnag evig has , liqua eni to secessant  
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art ability is by no means considered by the author as a final contribution to knowledge but merely as a possible

justification. As a result of the study involved in this thesis and its findings therefrom, the outstanding facts may be summarized as follows:

1. General art ability lends itself to analysis.
2. Analyzed, it is found to consist of thirteen measurable characteristics.
3. Practically two thirds (8 out of 13) of these characteristics are purely mental qualities while only five are physical.
4. Present art tests do not seem to be measures of fundamental ability.
5. Through the construction of an ability test as given in this thesis, and a program of testing to determine its validity, it is found possible to measure general art ability.
6. Prognosis on the strength of the test is possible within certain limits.
7. Aside from prognosis, the test serves as a teaching aid.

It is earnestly hoped that this thesis may prove of some assistance to students and teachers of art education in bringing together much material hitherto widely scattered and unrelated in character. The test for general



art ability is by no means considered by the author as a final contribution to the field, but merely as a possible justification of the criticism of previous tests and an indication of the possibilities of further development.

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ε απόντια επειδή πάντα οι γειτόνες της είναι πολύτιμη για  
επίσκεψη και για γέλειαν της. Επειδή είναι από μειονότητας οι οικισμοί  
της Καστοριάς αποτελούνται από μειονότητας της Καστοριάς  
επειδή περιλαμβάνουν την πλειονότητα της μειονότητας της Καστοριάς

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APPENDIX

... points of departure to follow . E. D. Tolson  
Leopold's Collage Record, 1912

"points of departure" E. D. Tolson  
(1912) N.Y. unpublished transcript to Leopold

On the following pages are given the frequency tables from which the medians were derived and the scale constructed. These tables show the total number of pupils in each grade, the number of pupils achieving a particular score in the test and the median derived. They show the same figures for the selected group of art students and teachers.

APPENDIX

XICMELTA

On the following pages are shown the frequency tables from which the medians were derived and the scale constructed. These tables show the total number of pupils in each grade, the number of pupils achieving a particular score in the test and the median derived. They show the same figures for the selected group of art students and teachers.

Score	Grade 7	8	9	Art Teachers
100	50	90	28	36
75	460	302	292	12
50	130	94	50	2
25	56	39	20	0
Totals	675	525	409	50
Median	75	75	75	100



Table for Test I

Score	Grade 7	8	9	Art Teachers
100	50	90	28	36
75	460	302	292	12
50	130	94	60	2
25	35	39	20	0
<u>Totals</u>	675	525	400	50
<u>Median</u>	75	75	75	100

I just got sick

strange	strange	strange	strange	strange
05	85	30	20	100
51	205	205	004	25
5	00	40	001	00
0	05	85	25	25
05	000	252	270	Total
001	55	25	55	last day

Table for Test III

Score	7	8	9	Art Teachers
-------	---	---	---	--------------

100	3	5	2	12
-----	---	---	---	----

95	2	3	1	3
----	---	---	---	---

90	14	8	2	3
----	----	---	---	---

85	29	18	5	5
----	----	----	---	---

80	51	23	12	12
----	----	----	----	----

Table for Test II

Score	Grade 7	8	9	Art Teachers
-------	---------	---	---	--------------

100	74	101	39	37
-----	----	-----	----	----

75	440	299	295	12
----	-----	-----	-----	----

50	128	92	46	1
----	-----	----	----	---

25	33	33	20	0
----	----	----	----	---

Totals	675	525	400	50
--------	-----	-----	-----	----

Median	75	75	75	100
--------	----	----	----	-----

II fact for eldest

estimated for 19		8	7	8	9
TC	'95	101	87	100	100
SI	888	888	844	87	87
I	84	86	891	82	82
O	88	88	88	88	88
OC	888	888	888	888	888
OOI	85	87	87	87	87
					mainly

Table for Test III

Score	7	8	9	Art Teachers
100	3	5	2	12
95	2	2	1	28
90	14	8	2	2
85	20	18	5	5
80	50	22	12	1
75	81	50	30	1
70	124	72	43	1
65	273	98	52	0
60	76	179	60	0
55	38	30	154	0
50	2	15	23	0
45	1	13	8	0
40	3	7	5	0
35	2	1	3	0
30	2	0	1	0
25	1	1	1	0
20	1	2	1	0
15	1	1	0	0
10	1	0	1	0
5	0	0	0	0
0	0	0	0	0
Totals	675	525	400	50
Median	65	60	55	95



Table for Test IV

Score	7	8	9	Art Teachers
100	83	91	47	38
75	429	301	271	10
50	139	102	71	2
25	24	31	11	0
Totals	675	525	400	50
Median	75	75	75	100

VI last not least

anterior	mid	6	7	posterior
85	74	58	68	100
01	478	105	884	25
5	17	501	951	02
0	11	35	49	25
02	004	222	270	1100
001	25	25	25	4000

Table for Test V

Score	7	8	9	Art Teachers
100	54	98	41	34
75	393	277	251	11
50	148	99	79	3
25	65	40	21	2
0	15	11	8	0
Totals	675	525	400	50
Median	75	75	75	100

Yeast for sale

STOCK NO	STOCK	STOCK	STOCK	STOCK
45	14	89	42	001
11	123	115	595	31
5	25	02	642	02
3	15	04	20	26
0	18	11	21	0
002	1007	122	120	11207
001	25	25	25	251001

## Table for Test VI

Table for Test VI

Score	7	8	9	Art Teachers
100	102	123	99	43
75	394	279	211	6
50	133	96	69	1
25	46	26	21	0
Totals	675	525	400	50
Median	75	75	75	100



Table for Test VII

Score	7	8	9	Art Teachers
100	98	94	77	39
75	429	276	214	8
50	126	116	100	3
25	22	39	9	0
Totals	675	525	400	50
Median	75	75	75	100

IV least to most

student	st	st	st	st	student
st	st	st	st	st	001
st	st	st	st	st	21
st	st	st	st	st	02
st	st	st	st	st	25
st	st	st	st	st	student
001	21	25	02	st	neighbor

Table for Test VIII

Score	7	8	9	Art Teachers
100	104	113	98	42
75	386	280	201	8
50	120	94	69	0
25	40	30	27	0
0	25	8	5	0
Totals	675	525	400	50
Median	75	75	75	100



Table for Test X

Table for Test IX

Score	7	8	9	Art Teachers
100	23	28	54	18
75	55	63	196	26
50	391	274	96	5
25	123	103	42	1
0	83	57	12	0
Totals	675	525	400	50
Median	50	50	75	75

Totals : 675 : 525 : 400 : 50

Median : 100 : 100 : 100 : 100



Table for Test X

Score	Gr. 7	8	9	Art Teachers
100	501	433	301	48
90	125	76	79	1
80	41	12	13	1
70	3		2	0
60	1	2	0	0
50	1	0	0	0
40	0	0	1	0
30	0	0	0	0
20	0	1	3	0
10	0	0	1	0
0	2	0	0	0
Totals	675	525	400	50
Medians	100	100	100	100

Table for Test X

Average				Boards
84	103	84	103	00
1	87	07	251	00
1	51	51	14	08
0	5		5	05
0	0	5	1	00
0	0	0	1	08
0	1	0	0	04
0	0	0	0	05
0	5	1	0	06
0	1	0	0	01
0	0	0	5	0
02	004	252	515	Total
Millions, 100, 100, 100, 100				

Table for Test XI

Score	Gr. 7	8	9	Art Teachers
100	89	101	89	42
75	410	306	211	6
50	126	104	96	2
25	50	14	4	0
Totals	675	525	400	50
Median	75	75	75	100

IN sheet for 1907

					Year	Source
SA	88	101	88		100	
O	115	905	101+		125	
O	88	101	88		95	
O	8	41	82		85	
O2	004	232	232	Major		
001	25	25	25	hobby		

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